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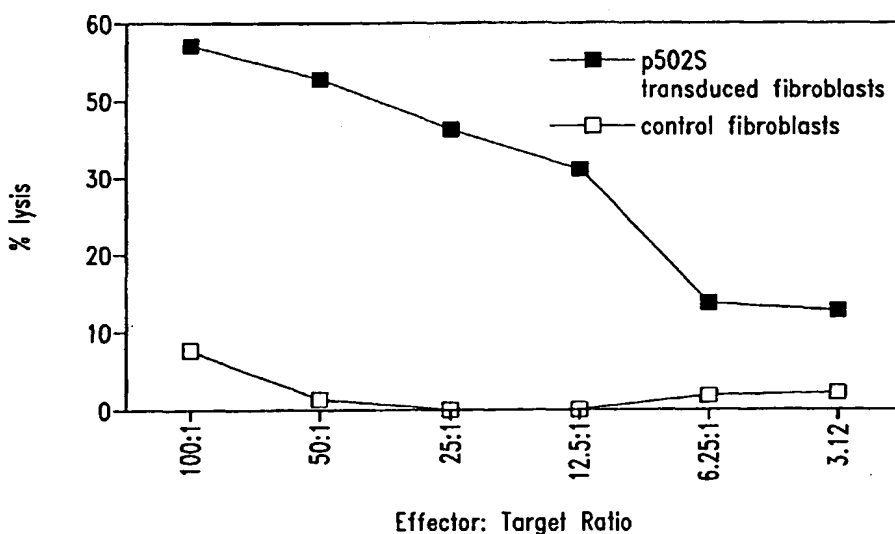
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[Continued on next page]

(54) Title: COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF PROSTATE CANCER



(57) Abstract: Compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer, are disclosed. Compositions may comprise one or more prostate-specific proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a prostate-specific protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as prostate cancer. Diagnostic methods based on detecting a prostate-specific protein, or mRNA encoding such a protein, in a sample are also provided.

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COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF PROSTATE CANCER

5 TECHNICAL FIELD

The present invention relates generally to therapy and diagnosis of cancer, such as prostate cancer. The invention is more specifically related to polypeptides comprising at least a portion of a prostate-specific protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in vaccines and pharmaceutical compositions for
10 prevention and treatment of prostate cancer, and for the diagnosis and monitoring of such cancers.

BACKGROUND OF THE INVENTION

Prostate cancer is the most common form of cancer among males, with an estimated incidence of 30% in men over the age of 50. Overwhelming clinical evidence shows that human prostate cancer has the propensity to metastasize to bone, and the disease appears to progress
15 inevitably from androgen dependent to androgen refractory status, leading to increased patient mortality. This prevalent disease is currently the second leading cause of cancer death among men in the U.S.

In spite of considerable research into therapies for the disease, prostate cancer remains difficult to treat. Commonly, treatment is based on surgery and/or radiation therapy, but
20 these methods are ineffective in a significant percentage of cases. Two previously identified prostate specific proteins - prostate specific antigen (PSA) and prostatic acid phosphatase (PAP) - have limited therapeutic and diagnostic potential. For example, PSA levels do not always correlate well with the presence of prostate cancer, being positive in a percentage of non-prostate cancer cases, including benign prostatic hyperplasia (BPH). Furthermore, PSA measurements correlate
25 with prostate volume, and do not indicate the level of metastasis.

In spite of considerable research into therapies for these and other cancers, prostate cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating such cancers. The present invention fulfills these needs and further provides other related advantages.

30 SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the

diagnosis and therapy of cancer, such as prostate cancer. In one aspect, the present invention provides polypeptides comprising at least a portion of a prostate-specific protein, or a variant thereof. Certain portions and other variants are immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises at least an immunogenic portion of a prostate-specific protein, or a variant thereof, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382, 384-476, 524, 526, 530, 531, 533, 535 and 536; (b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and (c) complements of any of the sequence of (a) or (b). In certain specific embodiments, such a polypeptide comprises at least a portion, or variant thereof, of a protein that includes an amino acid sequence selected from the group consisting of sequences recited in any one of SEQ ID NO: 112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380, 383, 477-483, 496, 504, 505, 519, 520, 522, 525, 527, 532, 534, 537-550.

The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a prostate-specific protein), expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines for prophylactic or therapeutic use are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and an immunostimulant.

The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a prostate-specific protein; and (b) a physiologically acceptable carrier. In certain embodiments, the present invention provides monoclonal antibodies that specifically bind to an amino acid sequence selected from the group consisting of SEQ ID NO: 496, 504, 505, 509-517, 522 and 541-550, together with monoclonal antibodies comprising a complementarity determining region selected from the group consisting of SEQ ID NO: 502, 503 and 506-508.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

5 Within related aspects, vaccines are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) an immunostimulant.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

10 Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with an immunostimulant.

15 Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate-specific protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.

20 Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described above.

25 Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a prostate-specific protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a prostate-specific protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expressed such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient. Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be prostate cancer.

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate-specific protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain

embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate-specific protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached drawings. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

BRIEF DESCRIPTION OF THE DRAWINGS AND SEQUENCE IDENTIFIERS

Figure 1 illustrates the ability of T cells to kill fibroblasts expressing the representative prostate-specific polypeptide P502S, as compared to control fibroblasts. The percentage lysis is shown as a series of effector:target ratios, as indicated.

Figures 2A and 2B illustrate the ability of T cells to recognize cells expressing the representative prostate-specific polypeptide P502S. In each case, the number of γ -interferon spots is shown for different numbers of responders. In Figure 2A, data is presented for fibroblasts pulsed with the P2S-12 peptide, as compared to fibroblasts pulsed with a control E75 peptide. In Figure 2B, data is presented for fibroblasts expressing P502S, as compared to fibroblasts expressing HER-2/neu.

Figure 3 represents a peptide competition binding assay showing that the P1S#10 peptide, derived from P501S, binds HLA-A2. Peptide P1S#10 inhibits HLA-A2 restricted presentation of fluM58 peptide to CTL clone D150M58 in TNF release bioassay. D150M58 CTL is specific for the HLA-A2 binding influenza matrix peptide fluM58.

5 Figure 4 illustrates the ability of T cell lines generated from P1S#10 immunized mice to specifically lyse P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat A2Kb targets, as compared to EGFP-transduced Jurkat A2Kb. The percent lysis is shown as a series of effector to target ratios, as indicated.

10 Figure 5 illustrates the ability of a T cell clone to recognize and specifically lyse Jurkat A2Kb cells expressing the representative prostate-specific polypeptide P501S, thereby demonstrating that the P1S#10 peptide may be a naturally processed epitope of the P501S polypeptide.

Figures 6A and 6B are graphs illustrating the specificity of a CD8⁺ cell line (3A-1) for a representative prostate-specific antigen (P501S). Figure 6A shows the results of a ⁵¹Cr release 15 assay. The percent specific lysis is shown as a series of effector:target ratios, as indicated. Figure 6B shows the production of interferon-gamma by 3A-1 cells stimulated with autologous B-LCL transduced with P501S, at varying effector:target ratios as indicated.

Figure 7 is a Western blot showing the expression of P501S in baculovirus.

Figure 8 illustrates the results of epitope mapping studies on P501S.

20 Figure 9 is a schematic representation of the P501S protein showing the location of transmembrane domains and predicted intracellular and extracellular domains.

Figure 10 is a genomic map showing the location of the prostate genes P775P, P704P, B305D, P712P and P774P within the Cat Eye Syndrome region of chromosome 22q11.2

25 Figure 11 shows the results of an ELISA assay of antibody specificity to P501S peptides.

SEQ ID NO: 1 is the determined cDNA sequence for F1-13

SEQ ID NO: 2 is the determined 3' cDNA sequence for F1-12

SEQ ID NO: 3 is the determined 5' cDNA sequence for F1-12

SEQ ID NO: 4 is the determined 3' cDNA sequence for F1-16

30 SEQ ID NO: 5 is the determined 3' cDNA sequence for H1-1

SEQ ID NO: 6 is the determined 3' cDNA sequence for H1-9

SEQ ID NO: 7 is the determined 3' cDNA sequence for H1-4

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SEQ ID NO: 106 is the determined cDNA sequence for 1D-4280

SEQ ID NO: 107 is the determined full length cDNA sequence for F1-12 (also referred to as P504S)

5

SEQ ID NO: 108 is the predicted amino acid sequence for F1-12

SEQ ID NO: 109 is the determined full length cDNA sequence for J1-17

SEQ ID NO: 110 is the determined full length cDNA sequence for L1-12 (also referred to as P501S)

SEQ ID NO: 111 is the determined full length cDNA sequence for N1-1862 (also referred to as

10 P503S)

SEQ ID NO: 112 is the predicted amino acid sequence for J1-17

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- SEQ ID NO: 203 is the determined extended cDNA sequence for 1D-4283
- SEQ ID NO: 204 is the determined extended cDNA sequence for 1D-4304
- SEQ ID NO: 205 is the determined extended cDNA sequence for 1D-4296
- SEQ ID NO: 206 is the determined extended cDNA sequence for 1D-4280
- 10 SEQ ID NO: 207 is the determined cDNA sequence for 10-d8fwd
- SEQ ID NO: 208 is the determined cDNA sequence for 10-H10con
- SEQ ID NO: 209 is the determined cDNA sequence for 11-C8rev
- SEQ ID NO: 210 is the determined cDNA sequence for 7.g6fwd
- SEQ ID NO: 211 is the determined cDNA sequence for 7.g6rev
- 15 SEQ ID NO: 212 is the determined cDNA sequence for 8-b5fwd
- SEQ ID NO: 213 is the determined cDNA sequence for 8-b5rev
- SEQ ID NO: 214 is the determined cDNA sequence for 8-b6fwd
- SEQ ID NO: 215 is the determined cDNA sequence for 8-b6 rev
- SEQ ID NO: 216 is the determined cDNA sequence for 8-d4fwd
- 20 SEQ ID NO: 217 is the determined cDNA sequence for 8-d9rev
- SEQ ID NO: 218 is the determined cDNA sequence for 8-g3fwd
- SEQ ID NO: 219 is the determined cDNA sequence for 8-g3rev
- SEQ ID NO: 220 is the determined cDNA sequence for 8-h11rev
- SEQ ID NO: 221 is the determined cDNA sequence for g-f12fwd
- 25 SEQ ID NO: 222 is the determined cDNA sequence for g-f3rev
- SEQ ID NO: 223 is the determined cDNA sequence for P509S
- SEQ ID NO: 224 is the determined cDNA sequence for P510S
- SEQ ID NO: 225 is the determined cDNA sequence for P703DE5
- SEQ ID NO: 226 is the determined cDNA sequence for 9-A11
- 30 SEQ ID NO: 227 is the determined cDNA sequence for 8-C6
- SEQ ID NO: 228 is the determined cDNA sequence for 8-H7
- SEQ ID NO: 229 is the determined cDNA sequence for JPTPN13

- SEQ ID NO: 230 is the determined cDNA sequence for JPTPN14
SEQ ID NO: 231 is the determined cDNA sequence for JPTPN23
SEQ ID NO: 232 is the determined cDNA sequence for JPTPN24
SEQ ID NO: 233 is the determined cDNA sequence for JPTPN25
5 SEQ ID NO: 234 is the determined cDNA sequence for JPTPN30
SEQ ID NO: 235 is the determined cDNA sequence for JPTPN34
SEQ ID NO: 236 is the determined cDNA sequence for PTPN35
SEQ ID NO: 237 is the determined cDNA sequence for JPTPN36
SEQ ID NO: 238 is the determined cDNA sequence for JPTPN38
10 SEQ ID NO: 239 is the determined cDNA sequence for JPTPN39
SEQ ID NO: 240 is the determined cDNA sequence for JPTPN40
SEQ ID NO: 241 is the determined cDNA sequence for JPTPN41
SEQ ID NO: 242 is the determined cDNA sequence for JPTPN42
SEQ ID NO: 243 is the determined cDNA sequence for JPTPN45
15 SEQ ID NO: 244 is the determined cDNA sequence for JPTPN46
SEQ ID NO: 245 is the determined cDNA sequence for JPTPN51
SEQ ID NO: 246 is the determined cDNA sequence for JPTPN56
SEQ ID NO: 247 is the determined cDNA sequence for PTPN64
SEQ ID NO: 248 is the determined cDNA sequence for JPTPN65
20 SEQ ID NO: 249 is the determined cDNA sequence for JPTPN67
SEQ ID NO: 250 is the determined cDNA sequence for JPTPN76
SEQ ID NO: 251 is the determined cDNA sequence for JPTPN84
SEQ ID NO: 252 is the determined cDNA sequence for JPTPN85
SEQ ID NO: 253 is the determined cDNA sequence for JPTPN86
25 SEQ ID NO: 254 is the determined cDNA sequence for JPTPN87
SEQ ID NO: 255 is the determined cDNA sequence for JPTPN88
SEQ ID NO: 256 is the determined cDNA sequence for JP1F1
SEQ ID NO: 257 is the determined cDNA sequence for JP1F2
SEQ ID NO: 258 is the determined cDNA sequence for JP1C2
30 SEQ ID NO: 259 is the determined cDNA sequence for JP1B1
SEQ ID NO: 260 is the determined cDNA sequence for JP1B2
SEQ ID NO: 261 is the determined cDNA sequence for JP1D3

- SEQ ID NO: 262 is the determined cDNA sequence for JP1A4
SEQ ID NO: 263 is the determined cDNA sequence for JP1F5
SEQ ID NO: 264 is the determined cDNA sequence for JP1E6
SEQ ID NO: 265 is the determined cDNA sequence for JP1D6
5 SEQ ID NO: 266 is the determined cDNA sequence for JP1B5
SEQ ID NO: 267 is the determined cDNA sequence for JP1A6
SEQ ID NO: 268 is the determined cDNA sequence for JP1E8
SEQ ID NO: 269 is the determined cDNA sequence for JP1D7
SEQ ID NO: 270 is the determined cDNA sequence for JP1D9
10 SEQ ID NO: 271 is the determined cDNA sequence for JP1C10
SEQ ID NO: 272 is the determined cDNA sequence for JP1A9
SEQ ID NO: 273 is the determined cDNA sequence for JP1F12
SEQ ID NO: 274 is the determined cDNA sequence for JP1E12
SEQ ID NO: 275 is the determined cDNA sequence for JP1D11
15 SEQ ID NO: 276 is the determined cDNA sequence for JP1C11
SEQ ID NO: 277 is the determined cDNA sequence for JP1C12
SEQ ID NO: 278 is the determined cDNA sequence for JP1B12
SEQ ID NO: 279 is the determined cDNA sequence for JP1A12
SEQ ID NO: 280 is the determined cDNA sequence for JP8G2
20 SEQ ID NO: 281 is the determined cDNA sequence for JP8H1
SEQ ID NO: 282 is the determined cDNA sequence for JP8H2
SEQ ID NO: 283 is the determined cDNA sequence for JP8A3
SEQ ID NO: 284 is the determined cDNA sequence for JP8A4
SEQ ID NO: 285 is the determined cDNA sequence for JP8C3
25 SEQ ID NO: 286 is the determined cDNA sequence for JP8G4
SEQ ID NO: 287 is the determined cDNA sequence for JP8B6
SEQ ID NO: 288 is the determined cDNA sequence for JP8D6
SEQ ID NO: 289 is the determined cDNA sequence for JP8F5
SEQ ID NO: 290 is the determined cDNA sequence for JP8A8
30 SEQ ID NO: 291 is the determined cDNA sequence for JP8C7
SEQ ID NO: 292 is the determined cDNA sequence for JP8D7
SEQ ID NO: 293 is the determined cDNA sequence for P8D8

- SEQ ID NO: 294 is the determined cDNA sequence for JP8E7
SEQ ID NO: 295 is the determined cDNA sequence for JP8F8
SEQ ID NO: 296 is the determined cDNA sequence for JP8G8
SEQ ID NO: 297 is the determined cDNA sequence for JP8B10
5 SEQ ID NO: 298 is the determined cDNA sequence for JP8C10
SEQ ID NO: 299 is the determined cDNA sequence for JP8E9
SEQ ID NO: 300 is the determined cDNA sequence for JP8E10
SEQ ID NO: 301 is the determined cDNA sequence for JP8F9
SEQ ID NO: 302 is the determined cDNA sequence for JP8H9
10 SEQ ID NO: 303 is the determined cDNA sequence for JP8C12
SEQ ID NO: 304 is the determined cDNA sequence for JP8E11
SEQ ID NO: 305 is the determined cDNA sequence for JP8E12
SEQ ID NO: 306 is the amino acid sequence for the peptide PS2#12
SEQ ID NO: 307 is the determined cDNA sequence for P711P
15 SEQ ID NO: 308 is the determined cDNA sequence for P712P
SEQ ID NO: 309 is the determined cDNA sequence for CLONE23
SEQ ID NO: 310 is the determined cDNA sequence for P774P
SEQ ID NO: 311 is the determined cDNA sequence for P775P
SEQ ID NO: 312 is the determined cDNA sequence for P715P
20 SEQ ID NO: 313 is the determined cDNA sequence for P710P
SEQ ID NO: 314 is the determined cDNA sequence for P767P
SEQ ID NO: 315 is the determined cDNA sequence for P768P
SEQ ID NO: 316-325 are the determined cDNA sequences of previously isolated genes
SEQ ID NO: 326 is the determined cDNA sequence for P703PDE5
25 SEQ ID NO: 327 is the predicted amino acid sequence for P703PDE5
SEQ ID NO: 328 is the determined cDNA sequence for P703P6.26
SEQ ID NO: 329 is the predicted amino acid sequence for P703P6.26
SEQ ID NO: 330 is the determined cDNA sequence for P703PX-23
SEQ ID NO: 331 is the predicted amino acid sequence for P703PX-23
30 SEQ ID NO: 332 is the determined full length cDNA sequence for P509S
SEQ ID NO: 333 is the determined extended cDNA sequence for P707P (also referred to as 11-C9)
SEQ ID NO: 334 is the determined cDNA sequence for P714P

- SEQ ID NO: 335 is the determined cDNA sequence for P705P (also referred to as 9-F3)
- SEQ ID NO: 336 is the predicted amino acid sequence for P705P
- SEQ ID NO: 337 is the amino acid sequence of the peptide P1S#10
- SEQ ID NO: 338 is the amino acid sequence of the peptide p5
- 5 SEQ ID NO: 339 is the predicted amino acid sequence of P509S
- SEQ ID NO: 340 is the determined cDNA sequence for P778P
- SEQ ID NO: 341 is the determined cDNA sequence for P786P
- SEQ ID NO: 342 is the determined cDNA sequence for P789P
- SEQ ID NO: 343 is the determined cDNA sequence for a clone showing homology to Homo
- 10 sapiens MM46 mRNA
- SEQ ID NO: 344 is the determined cDNA sequence for a clone showing homology to Homo sapiens TNF-alpha stimulated ABC protein (ABC50) mRNA
- SEQ ID NO: 345 is the determined cDNA sequence for a clone showing homology to Homo sapiens mRNA for E-cadherin
- 15 SEQ ID NO: 346 is the determined cDNA sequence for a clone showing homology to Human nuclear-encoded mitochondrial serine hydroxymethyltransferase (SHMT)
- SEQ ID NO: 347 is the determined cDNA sequence for a clone showing homology to Homo sapiens natural resistance-associated macrophage protein2 (NRAMP2)
- SEQ ID NO: 348 is the determined cDNA sequence for a clone showing homology to Homo
- 20 sapiens phosphoglucomutase-related protein (PGMRP)
- SEQ ID NO: 349 is the determined cDNA sequence for a clone showing homology to Human mRNA for proteasome subunit p40
- SEQ ID NO: 350 is the determined cDNA sequence for P777P
- SEQ ID NO: 351 is the determined cDNA sequence for P779P
- 25 SEQ ID NO: 352 is the determined cDNA sequence for P790P
- SEQ ID NO: 353 is the determined cDNA sequence for P784P
- SEQ ID NO: 354 is the determined cDNA sequence for P776P
- SEQ ID NO: 355 is the determined cDNA sequence for P780P
- SEQ ID NO: 356 is the determined cDNA sequence for P544S
- 30 SEQ ID NO: 357 is the determined cDNA sequence for P745S
- SEQ ID NO: 358 is the determined cDNA sequence for P782P
- SEQ ID NO: 359 is the determined cDNA sequence for P783P

- SEQ ID NO: 360 is the determined cDNA sequence for unknown 17984
- SEQ ID NO: 361 is the determined cDNA sequence for P787P
- SEQ ID NO: 362 is the determined cDNA sequence for P788P
- SEQ ID NO: 363 is the determined cDNA sequence for unknown 17994
- 5 SEQ ID NO: 364 is the determined cDNA sequence for P781P
- SEQ ID NO: 365 is the determined cDNA sequence for P785P
- SEQ ID NO: 366-375 are the determined cDNA sequences for splice variants of B305D.
- SEQ ID NO: 376 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 366.
- 10 SEQ ID NO: 377 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 372.
- SEQ ID NO: 378 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 373.
- SEQ ID NO: 379 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 374.
- 15 SEQ ID NO: 380 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 375.
- SEQ ID NO: 381 is the determined cDNA sequence for B716P.
- SEQ ID NO: 382 is the determined full-length cDNA sequence for P711P.
- 20 SEQ ID NO: 383 is the predicted amino acid sequence for P711P.
- SEQ ID NO: 384 is the cDNA sequence for P1000C.
- SEQ ID NO: 385 is the cDNA sequence for CGI-82.
- SEQ ID NO: 386 is the cDNA sequence for 23320.
- SEQ ID NO: 387 is the cDNA sequence for CGI-69.
- 25 SEQ ID NO: 388 is the cDNA sequence for L-idoitol-2-dehydrogenase.
- SEQ ID NO: 389 is the cDNA sequence for 23379.
- SEQ ID NO: 390 is the cDNA sequence for 23381.
- SEQ ID NO: 391 is the cDNA sequence for KIAA0122.
- SEQ ID NO: 392 is the cDNA sequence for 23399.
- 30 SEQ ID NO: 393 is the cDNA sequence for a previously identified gene.
- SEQ ID NO: 394 is the cDNA sequence for HCLBP.
- SEQ ID NO: 395 is the cDNA sequence for transglutaminase.

- SEQ ID NO:396 is the cDNA sequence for a previously identified gene.
- SEQ ID NO:397 is the cDNA sequence for PAP.
- SEQ ID NO:398 is the cDNA sequence for Ets transcription factor PDEF.
- SEQ ID NO:399 is the cDNA sequence for hTGR.
- 5 SEQ ID NO:400 is the cDNA sequence for KIAA0295.
- SEQ ID NO:401 is the cDNA sequence for 22545.
- SEQ ID NO:402 is the cDNA sequence for 22547.
- SEQ ID NO:403 is the cDNA sequence for 22548.
- SEQ ID NO:404 is the cDNA sequence for 22550.
- 10 SEQ ID NO:405 is the cDNA sequence for 22551.
- SEQ ID NO:406 is the cDNA sequence for 22552.
- SEQ ID NO:407 is the cDNA sequence for 22553.
- SEQ ID NO:408 is the cDNA sequence for 22558.
- SEQ ID NO:409 is the cDNA sequence for 22562.
- 15 SEQ ID NO:410 is the cDNA sequence for 22565.
- SEQ ID NO:411 is the cDNA sequence for 22567.
- SEQ ID NO:412 is the cDNA sequence for 22568.
- SEQ ID NO:413 is the cDNA sequence for 22570.
- SEQ ID NO:414 is the cDNA sequence for 22571.
- 20 SEQ ID NO:415 is the cDNA sequence for 22572.
- SEQ ID NO:416 is the cDNA sequence for 22573.
- SEQ ID NO:417 is the cDNA sequence for 22573.
- SEQ ID NO:418 is the cDNA sequence for 22575.
- SEQ ID NO:419 is the cDNA sequence for 22580.
- 25 SEQ ID NO:420 is the cDNA sequence for 22581.
- SEQ ID NO:421 is the cDNA sequence for 22582.
- SEQ ID NO:422 is the cDNA sequence for 22583.
- SEQ ID NO:423 is the cDNA sequence for 22584.
- SEQ ID NO:424 is the cDNA sequence for 22585.
- 30 SEQ ID NO:425 is the cDNA sequence for 22586.
- SEQ ID NO:426 is the cDNA sequence for 22587.
- SEQ ID NO:427 is the cDNA sequence for 22588.

- SEQ ID NO:428 is the cDNA sequence for 22589.
SEQ ID NO:429 is the cDNA sequence for 22590.
SEQ ID NO:430 is the cDNA sequence for 22591.
SEQ ID NO:431 is the cDNA sequence for 22592.
5 SEQ ID NO:432 is the cDNA sequence for 22593.
SEQ ID NO:433 is the cDNA sequence for 22594.
SEQ ID NO:434 is the cDNA sequence for 22595.
SEQ ID NO:435 is the cDNA sequence for 22596.
SEQ ID NO:436 is the cDNA sequence for 22847.
10 SEQ ID NO:437 is the cDNA sequence for 22848.
SEQ ID NO:438 is the cDNA sequence for 22849.
SEQ ID NO:439 is the cDNA sequence for 22851.
SEQ ID NO:440 is the cDNA sequence for 22852.
SEQ ID NO:441 is the cDNA sequence for 22853.
15 SEQ ID NO:442 is the cDNA sequence for 22854.
SEQ ID NO:443 is the cDNA sequence for 22855.
SEQ ID NO:444 is the cDNA sequence for 22856.
SEQ ID NO:445 is the cDNA sequence for 22857.
SEQ ID NO:446 is the cDNA sequence for 23601.
20 SEQ ID NO:447 is the cDNA sequence for 23602.
SEQ ID NO:448 is the cDNA sequence for 23605.
SEQ ID NO:449 is the cDNA sequence for 23606.
SEQ ID NO:450 is the cDNA sequence for 23612.
SEQ ID NO:451 is the cDNA sequence for 23614.
25 SEQ ID NO:452 is the cDNA sequence for 23618.
SEQ ID NO:453 is the cDNA sequence for 23622.
SEQ ID NO:454 is the cDNA sequence for folate hydrolase.
SEQ ID NO:455 is the cDNA sequence for LIM protein.
SEQ ID NO:456 is the cDNA sequence for a known gene.
30 SEQ ID NO:457 is the cDNA sequence for a known gene.
SEQ ID NO:458 is the cDNA sequence for a previously identified gene.
SEQ ID NO:459 is the cDNA sequence for 23045.

SEQ ID NO:460 is the cDNA sequence for 23032.

SEQ ID NO:461 is the cDNA sequence for 23054.

SEQ ID NO:462-467 are cDNA sequences for known genes.

SEQ ID NO:468-471 are cDNA sequences for P710P.

5 SEQ ID NO:472 is a cDNA sequence for P1001C.

SEQ ID NO: 473 is the determined cDNA sequence for a first splice variant of P775P (referred to as 27505).

SEQ ID NO: 474 is the determined cDNA sequence for a second splice variant of P775P (referred to as 19947).

10 SEQ ID NO: 475 is the determined cDNA sequence for a third splice variant of P775P (referred to as 19941).

SEQ ID NO: 476 is the determined cDNA sequence for a fourth splice variant of P775P (referred to as 19937).

15 SEQ ID NO: 477 is a first predicted amino acid sequence encoded by the sequence of SEQ ID NO: 474.

SEQ ID NO: 478 is a second predicted amino acid sequence encoded by the sequence of SEQ ID NO: 474.

SEQ ID NO: 479 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 475.

20 SEQ ID NO: 480 is a first predicted amino acid sequence encoded by the sequence of SEQ ID NO: 473.

SEQ ID NO: 481 is a second predicted amino acid sequence encoded by the sequence of SEQ ID NO: 473.

25 SEQ ID NO: 482 is a third predicted amino acid sequence encoded by the sequence of SEQ ID NO: 473.

SEQ ID NO: 483 is a fourth predicted amino acid sequence encoded by the sequence of SEQ ID NO: 473.

SEQ ID NO: 484 is the first 30 amino acids of the *M. tuberculosis* antigen Ra12.

SEQ ID NO: 485 is the PCR primer AW025.

30 SEQ ID NO: 486 is the PCR primer AW003.

SEQ ID NO: 487 is the PCR primer AW027.

SEQ ID NO: 488 is the PCR primer AW026.

- SEQ ID NO: 489-501 are peptides employed in epitope mapping studies.
- SEQ ID NO: 502 is the determined cDNA sequence of the complementarity determining region for the anti-P503S monoclonal antibody 20D4.
- SEQ ID NO: 503 is the determined cDNA sequence of the complementarity determining region for the anti-P503S monoclonal antibody JA1.
- SEQ ID NO: 504 & 505 are peptides employed in epitope mapping studies.
- SEQ ID NO: 506 is the determined cDNA sequence of the complementarity determining region for the anti-P703P monoclonal antibody 8H2.
- SEQ ID NO: 507 is the determined cDNA sequence of the complementarity determining region for the anti-P703P monoclonal antibody 7H8.
- SEQ ID NO: 508 is the determined cDNA sequence of the complementarity determining region for the anti-P703P monoclonal antibody 2D4.
- SEQ ID NO: 509-522 are peptides employed in epitope mapping studies.
- SEQ ID NO: 523 is a mature form of P703P used to raise antibodies against P703P.
- SEQ ID NO: 524 is the putative full-length cDNA sequence of P703P.
- SEQ ID NO: 525 is the predicted amino acid sequence encoded by SEQ ID NO: 524.
- SEQ ID NO: 526 is the full-length cDNA sequence for P790P.
- SEQ ID NO: 527 is the predicted amino acid sequence for P790P.
- SEQ ID NO: 528 & 529 are PCR primers.
- SEQ ID NO: 530 is the cDNA sequence of a splice variant of SEQ ID NO: 366.
- SEQ ID NO: 531 is the cDNA sequence of the open reading frame of SEQ ID NO: 530.
- SEQ ID NO: 532 is the predicted amino acid encoded by the sequence of SEQ ID NO: 531.
- SEQ ID NO: 533 is the DNA sequence of a putative ORF of P775P.
- SEQ ID NO: 534 is the predicted amino acid sequence encoded by SEQ ID NO: 533.
- SEQ ID NO: 535 is a first full-length cDNA sequence for P510S.
- SEQ ID NO: 536 is a second full-length cDNA sequence for P510S.
- SEQ ID NO: 537 is the predicted amino acid sequence encoded by SEQ ID NO: 535.
- SEQ ID NO: 538 is the predicted amino acid sequence encoded by SEQ ID NO: 536.
- SEQ ID NO: 539 is the peptide P501S-370.
- SEQ ID NO: 540 is the peptide P501S-376.
- SEQ ID NO: 541-550 are epitopes of P501S.
- SEQ ID NO: 551 corresponds to amino acids 543-553 of P501S.

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer. The compositions described herein may include prostate-specific polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (*e.g.*, T cells). Polypeptides of the present invention generally comprise at least a portion (such as an immunogenic portion) of a prostate-specific protein or a variant thereof. A "prostate-specific protein" is a protein that is expressed in normal prostate and/or prostate tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a non-prostate normal tissue, as determined using a representative assay provided herein. Certain prostate-specific proteins are proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with prostate cancer. Polynucleotides of the subject invention generally comprise a DNA or RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence. Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to a polypeptide as described above. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B-cells that express a polypeptide as described above. T cells that may be employed within such compositions are generally T cells that are specific for a polypeptide as described above.

The present invention is based on the discovery of human prostate-specific proteins. Sequences of polynucleotides encoding certain prostate-specific proteins, or portions thereof, are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382, 384-476, 524, 526, 530, 531, 533, 535 and 536. Sequences of polypeptides comprising at least a portion of a prostate-specific protein are provided in SEQ ID NOs:112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380, 383, 477-483, 496, 504, 505, 519, 520, 522, 525, 527, 532, 534 and 537-550.

PROSTATE-SPECIFIC PROTEIN POLYNUCLEOTIDES

Any polynucleotide that encodes a prostate-specific protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred

polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides and more preferably at least 45 consecutive nucleotides, that encode a portion of a prostate-specific protein. More preferably, a polynucleotide encodes an immunogenic portion of a prostate-specific protein. Polynucleotides complementary to any such sequences are also
5 encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the
10 present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.*, an endogenous sequence that encodes a prostate-specific protein or a portion thereof) or may comprise a variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions
15 and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. Variants preferably exhibit at least about 70% identity, more preferably at least about 80% identity and most preferably at least about 90% identity to a polynucleotide sequence that encodes a native prostate-specific protein or a portion thereof. The
20 term "variants" also encompasses homologous genes of xenogenic origin.

Two polynucleotide or polypeptide sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local
25 regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions, usually 30 to about 75, 40 to about 50, in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the
30 Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices

for detecting distant relationships. In Dayhoff, M.O. (ed.) Atlas of Protein Sequence and Structure, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenesis pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS* 5:151-153; Myers, E.W. and Muller W. (1988) *CABIOS* 4:11-17; Robinson, E.D. (1971) *Comb. Theor* 11:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol.* 4:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad., Sci. USA* 80:726-730.

Preferably, the “percentage of sequence identity” is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (*i.e.*, gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference sequences (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (*i.e.*, the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native prostate-specific protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such

as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example,
5 a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (*i.e.*, expression that is at least five fold greater in a prostate-specific than in normal tissue, as determined using a representative assay provided herein). Such screens may be performed using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997).
10 Alternatively, polypeptides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as prostate-specific cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

15 An amplified portion may be used to isolate a full length gene from a suitable library (*e.g.*, a prostate-specific cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes.
20 Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (*e.g.*, by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (*see* Sambrook et al., *Molecular Cloning: A*
25 *Laboratory Manual*, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The
30 complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into

a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments; using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (*see* Triglia et al., *Nucl. Acids Res.* 16:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic.* 1:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids. Res.* 19:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (*e.g.*, NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence. Full length DNA sequences may also be obtained by analysis of genomic fragments.

Certain nucleic acid sequences of cDNA molecules encoding at least a portion of a prostate-specific protein are provided in SEQ ID NO:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382, 384-476, 524, 526, 530, 531, 533, 535 and 536.

Isolation of these polynucleotides is described below. Each of these prostate-specific proteins was overexpressed in prostate tumor tissue.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis.

5 Modifications in a polynucleotide sequence may also be introduced using standard mutagenesis techniques, such as oligonucleotide-directed site-specific mutagenesis (*see* Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding a prostate-specific protein, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain
10 portions may be used to prepare an encoded polypeptide, as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo* (*e.g.*, by transfecting antigen-presenting cells, such as dendritic cells, with a cDNA construct encoding a prostate-specific polypeptide, and administering the transfected cells to the patient).

15 A portion of a sequence complementary to a coding sequence (*i.e.*, an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced into cells of tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of a protein. Antisense technology can be used to control gene expression
20 through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory molecules (*see* Gee et al., *In Huber and Carr, Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994)). Alternatively, an antisense molecule may be designed to hybridize with a control region of a gene (*e.g.*, promoter, enhancer or transcription initiation site), and block transcription of
25 the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

A portion of a coding sequence, or of a complementary sequence, may also be designed as a probe or primer to detect gene expression. Probes may be labeled with a variety of reporter groups, such as radionuclides and enzymes, and are preferably at least 10 nucleotides in length, more preferably at least 20 nucleotides in length and still more preferably at least 30
30 nucleotides in length. Primers, as noted above, are preferably 22-30 nucleotides in length.

Any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3'

ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl- methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

5 Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation vectors and sequencing vectors. In general, a vector
10 will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for
15 therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (e.g., avian pox virus). The polynucleotides may also be administered as naked plasmid vectors.
20 Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a receptor on a specific target cell, to render the vector target specific. Targeting may also be accomplished using an antibody, by methods known to those of ordinary
25 skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane
30 vesicle). The preparation and use of such systems is well known in the art.

PROSTATE-SPECIFIC POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of a prostate-specific protein or a variant thereof, as described herein. As noted above, a "prostate-specific protein" is a protein that is expressed by normal prostate and/or prostate tumor cells. Proteins that are prostate-specific proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with prostate cancer. Polypeptides as described herein may be of any length. Additional sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a prostate-specific protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions may contain a small N- and/or C-terminal deletion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.*, they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native prostate-specific protein is a portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the

immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, ^{125}I -labeled Protein A.

As noted above, a composition may comprise a variant of a native prostate-specific protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native prostate-specific protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein. Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants in which a small portion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein. Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most preferably at least about 95% identity (determined as described above) to the identified polypeptides.

Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydrophobic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino

acids that have minimal influence on the immunogenicity, secondary structure and hydrophobic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (e.g., poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques.

Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast, higher eukaryotic and plant cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. See Merrifield, *J. Am. Chem. Soc.* 85:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known prostate-specific protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner),

preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea et al., *Gene* 40:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA* 83:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are

located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see, for example, Stoute et al. New Engl. J. Med., 336:86-91, 1997*).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium *Haemophilus influenza B* (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the *LytA* gene; *Gene* 43:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology* 10:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its

original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector
5 that is not a part of the natural environment.

BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a prostate-specific protein. As used herein, an
10 antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a prostate-specific protein if it reacts at a detectable level (within, for example, an ELISA) with a prostate-specific protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding
15 constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about 10^3 L/mol. The binding constant may be determined using methods well known in the art.

20 Binding agents may be further capable of differentiating between patients with and without a cancer, such as prostate cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a prostate-specific protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal indicating the absence of the disease in at least about 90% of individuals
25 without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (e.g., blood, sera, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the
30 above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Most preferably, antibodies employed in the inventive methods have the ability to induce lysis of tumor cells by activation of complement and mediation of antibody-dependent cellular cytotoxicity (ADCC). Antibodies of different classes and subclasses differ in these properties. For example, mouse antibodies of the IgG2a and IgG3 classes are capable of activating serum complement upon binding to target cells which express the antigen against which the antibodies were raised, and can mediate ADCC.

Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. See, e.g., Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (e.g., mice, rats, rabbits, sheep or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the desired specificity (i.e., reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells

and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are
5 selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse.

10 Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

The preparation of mouse and rabbit monoclonal antibodies that specifically bind to
15 polypeptides of the present invention is described in detail below. However, the antibodies of the present invention are not limited to those derived from mice. Human antibodies may also be employed in the inventive methods and may prove to be preferable. Such antibodies can be obtained using human hybridomas as described by Cote *et al.* (Monoclonal Antibodies and Cancer Therapy, Alan R. Lisa, p. 77, 1985). The present invention also encompasses antibodies made by
20 recombinant means such as chimeric antibodies, wherein the variable region and constant region are derived from different species, and CDR-grafted antibodies, wherein the complementarity determining region is derived from a different species, as described in US Patents 4,816,567 and 5,225,539. Chimeric antibodies may be prepared by splicing genes for a mouse antibody molecule having a desired antigen specificity together with genes for a human antibody molecule having the
25 desired biological activity, such as activation of human complement and mediation of ADCC (Morrison *et al. Proc. Natl. Acad. Sci. USA* 81:6851, 1984; Neuberger *et al. Nature* 312:604, 1984; Takeda *et al. Nature* 314:452, 1985).

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard
30 techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*,

Cold Spring Harbor Laboratory, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y , ^{123}I , ^{125}I , ^{131}I , ^{186}Re , ^{188}Re , ^{211}At , and ^{212}Bi . Preferred drugs include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diphtheria toxin, cholera toxin, gelonin, *Pseudomonas* exotoxin, *Shigella* toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to

Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

5 It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or
10 linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent
15 No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating
20 compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of
25 a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

T CELLS

30 Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a prostate-specific protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from bone marrow, peripheral

blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the ISOLEX™ system, available from Nexell Therapeutics Inc., Irvine, CA (see also U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated
5 humans, non-human mammals, cell lines or cultures.

T cells may be stimulated with a prostate-specific polypeptide, polynucleotide encoding a prostate-specific polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a prostate-specific
10 polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a prostate-specific polypeptide if the T cells specifically proliferate, secrete cytokines or kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a
15 variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* 54:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell
20 proliferation can be detected by measuring an increased rate of DNA synthesis (e.g., by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a prostate-specific polypeptide (100 ng/ml - 100 µg/ml, preferably 200 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of
25 the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (e.g., TNF or IFN-γ) is indicative of T cell activation (see Coligan et al., *Current Protocols in Immunology*, vol. 1, Wiley Interscience (Greene 1998)). T cells that have been activated in response to a prostate-specific polypeptide, polynucleotide or polypeptide-expressing APC may be CD4⁺ and/or CD8⁺. Prostate-specific protein-specific T cells may be expanded using
30 standard techniques. Within preferred embodiments, the T cells are derived from either a patient or a related, or unrelated, donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4⁺ or CD8⁺ T cells that proliferate in response to a prostate-specific polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a prostate-specific polypeptide, or a short peptide
5 corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a prostate-specific polypeptide. Alternatively, one or more T cells that proliferate in the presence of a prostate-specific protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

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PHARMACEUTICAL COMPOSITIONS AND VACCINES

Within certain aspects, polypeptides, polynucleotides, T cells and/or binding agents disclosed herein may be incorporated into pharmaceutical compositions or immunogenic compositions (*i.e.*, vaccines). Pharmaceutical compositions comprise one or more such compounds
15 and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds and an immunostimulant. An immunostimulant may be any substance that enhances an immune response to an exogenous antigen. Examples of immunostimulants include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally
20 described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the
25 composition or vaccine.

A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression
30 systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems* 15:143-198, 1998, and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression

in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (e.g., vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *Proc. Natl. Acad. Sci. USA* 86:317-321, 1989; Flexner et al., *Ann. N.Y. Acad. Sci.* 569:86-103, 1989; Flexner et al., *Vaccine* 8:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques* 6:616-627, 1988; Rosenfeld et al., *Science* 252:431-434, 1991; Kolls et al., *Proc. Natl. Acad. Sci. USA* 91:215-219, 1994; Kass-Eisler et al., *Proc. Natl. Acad. Sci. USA* 90:11498-11502, 1993; Guzman et al., *Circulation* 88:2838-2848, 1993; and Guzman et al., *Cir. Res.* 73:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science* 259:1745-1749, 1993 and reviewed by Cohen, *Science* 259:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (e.g., polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (e.g., neutral buffered saline or phosphate buffered saline), carbohydrates (e.g., glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA

or glutathione, adjuvants (e.g., aluminum hydroxide) and/or preservatives. Alternatively, compositions of the present invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of immunostimulants may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bordetella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (e.g., IFN- γ , TNF α , IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (e.g., IL-4, IL-5, IL-6 and IL-10) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt. MPL adjuvants are available from Ribi ImmunoChem Research Inc. (Hamilton, MT; see US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555. Another preferred adjuvant is a saponin, preferably QS21, which may be used alone or in combination with other adjuvants. For example,

an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent
5 adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210. Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient.

The compositions described herein may be administered as part of a sustained release
10 formulation (*i.e.*, a formulation such as a capsule, sponge or gel (composed of polysaccharides for example) that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix
15 and/or contained within a reservoir surrounded by a rate controlling membrane. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical
20 compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the
25 antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or
30 progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature* 392:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy,

Ann. Rev. Med. 50:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*), their ability to take-up, process and present antigens with high efficiency, and their ability to activate naïve T cell responses. Dendritic cells may, of course, be engineered to express specific cell-surface
5 receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (see Zitvogel et al., *Nature Med.* 4:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone
10 marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNF α to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into
15 dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNF α , CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce differentiation, maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this
20 nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fc γ receptor and mannose receptor. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II
25 MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80, CD86 and 4-1BB).

APCs may generally be transfected with a polynucleotide encoding a prostate-specific protein (or portion or other variant thereof) such that the prostate-specific polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex*
30 *vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection

that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells
5 with the prostate-specific polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of
10 the polypeptide.

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as prostate cancer. Within such methods, pharmaceutical
15 compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor.
20 Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react
25 against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides disclosed herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not
30 necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as CD8⁺ cytotoxic T lymphocytes and CD4⁺ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer

cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate
5 antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in*
10 *vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage, monocyte,
15 fibroblast or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies
20 have shown that cultured effector cells can be induced to grow *in vivo* and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever et al., *Immunological Reviews* 157:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back
25 into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions disclosed herein, as well as dosage, will vary from individual to individual, and may be readily established
30 using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous, intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered

over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50%
5 above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-
10 vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 25 μ g to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active
15 compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to a prostate-specific protein generally correlate with an improved clinical outcome. Such immune responses may generally be
20 evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or
25 more prostate-specific proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, urine and/or tumor biopsies) obtained from the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as prostate cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the
30 agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer.

In general, a prostate tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See, e.g., Harlow and Lane, 5 Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized 10 on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, 15 protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding agent. Suitable polypeptides for use within such assays include full 20 length prostate-specific proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or 25 disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" 30 refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a

membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of
5 binding agent ranging from about 10 ng to about 10 μ g, and preferably about 100 ng to about 1 μ g, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the
10 binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may
15 be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The
20 amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween
25 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with prostate cancer.
30 Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by

assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains
5 a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of
10 time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group
15 (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as prostate cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a
20 signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred embodiment, the cut-off value is
25 determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest
30 to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along

the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 μ g, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use prostate-specific polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such prostate-specific protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a prostate-specific protein in a biological sample. Within certain methods, a biological sample comprising CD4⁺ and/or CD8⁺ T cells isolated from a patient is incubated with a prostate-specific polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that

expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may
5 be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with prostate-specific polypeptide (*e.g.*, 5 - 25 µg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of prostate-specific polypeptide to serve as a control. For CD4⁺ T cells, activation is preferably detected by evaluating proliferation of the T cells. For CD8⁺ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater
10 and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a prostate-specific protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to
15 amplify a portion of a prostate-specific cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the prostate-specific protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a prostate-specific protein may be used in a hybridization
20 assay to detect the presence of polynucleotide encoding the protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a prostate-specific protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in
25 length. Preferably, oligonucleotide primers and/or probes will hybridize to a polynucleotide encoding a polypeptide disclosed herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous nucleotides, more preferably at least 15
30 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382, 384-476, 524, 526, 530, 531, 533, 535 and 536. Techniques for both PCR based assays and hybridization assays

are well known in the art (*see*, for example, Mullis et al., *Cold Spring Harbor Symp. Quant. Biol.*, 51:263, 1987; Erlich ed., *PCR Technology*, Stockton Press, NY, 1989).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the disclosed compositions may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple prostate-specific protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For
5 example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a prostate-specific protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or
10 indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a prostate-specific protein in a biological sample. Such kits generally comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a prostate-specific protein. Such an oligonucleotide may be used, for example, within a PCR or
15 hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a prostate-specific protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLES

EXAMPLE 1

ISOLATION AND CHARACTERIZATION OF PROSTATE-SPECIFIC POLYPEPTIDES

This Example describes the isolation of certain prostate-specific polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library was constructed from prostate tumor poly A⁺ RNA using a Superscript Plasmid System for cDNA Synthesis and Plasmid Cloning kit (BRL Life Technologies, Gaithersburg, MD 20897) following the manufacturer's protocol. Specifically, prostate tumor tissues were homogenized with polytron (Kinematica, Switzerland) and total RNA was extracted using Trizol reagent (BRL Life Technologies) as directed by the manufacturer. The poly A⁺ RNA was then purified using a Qiagen oligotex spin column mRNA purification kit (Qiagen, Santa Clarita, CA 91355) according to the manufacturer's protocol. First-strand cDNA was synthesized using the NotI/Oligo-dT18 primer. Double-stranded cDNA was synthesized, ligated with EcoRI/BAXI adaptors (Invitrogen, San Diego, CA) and digested with NotI. Following size fractionation with Chroma Spin-1000 columns (Clontech, Palo Alto, CA), the cDNA was ligated into the EcoRI/NotI site of pCDNA3.1 (Invitrogen) and transformed into ElectroMax *E. coli* DH10B cells (BRL Life Technologies) by electroporation.

Using the same procedure, a normal human pancreas cDNA expression library was prepared from a pool of six tissue specimens (Clontech). The cDNA libraries were characterized by determining the number of independent colonies, the percentage of clones that carried insert, the average insert size and by sequence analysis. The prostate tumor library contained 1.64×10^7 independent colonies, with 70% of clones having an insert and the average insert size being 1745 base pairs. The normal pancreas cDNA library contained 3.3×10^6 independent colonies, with 69% of clones having inserts and the average insert size being 1120 base pairs. For both libraries, sequence analysis showed that the majority of clones had a full length cDNA sequence and were synthesized from mRNA, with minimal rRNA and mitochondrial DNA contamination.

cDNA library subtraction was performed using the above prostate tumor and normal pancreas cDNA libraries, as described by Hara *et al.* (*Blood*, 84:189-199, 1994) with some modifications. Specifically, a prostate tumor-specific subtracted cDNA library was generated as

follows. Normal pancreas cDNA library (70 µg) was digested with EcoRI, NotI, and SfuI, followed by a filling-in reaction with DNA polymerase Klenow fragment. After phenol-chloroform extraction and ethanol precipitation, the DNA was dissolved in 100 µl of H₂O, heat-denatured and mixed with 100 µl (100 µg) of Photoprobe biotin (Vector Laboratories, Burlingame, CA). As
5 recommended by the manufacturer, the resulting mixture was irradiated with a 270 W sunlamp on ice for 20 minutes. Additional Photoprobe biotin (50 µl) was added and the biotinylation reaction was repeated. After extraction with butanol five times, the DNA was ethanol-precipitated and dissolved in 23 µl H₂O to form the driver DNA.

To form the tracer DNA, 10 µg prostate tumor cDNA library was digested with
10 BamHI and XhoI, phenol chloroform extracted and passed through Chroma spin-400 columns (Clontech). Following ethanol precipitation, the tracer DNA was dissolved in 5 µl H₂O. Tracer DNA was mixed with 15 µl driver DNA and 20 µl of 2 x hybridization buffer (1.5 M NaCl/10 mM EDTA/50 mM HEPES pH 7.5/0.2% sodium dodecyl sulfate), overlaid with mineral oil, and heat-denatured completely. The sample was immediately transferred into a 68 °C water bath and
15 incubated for 20 hours (long hybridization [LH]). The reaction mixture was then subjected to a streptavidin treatment followed by phenol/chloroform extraction. This process was repeated three more times. Subtracted DNA was precipitated, dissolved in 12 µl H₂O, mixed with 8 µl driver DNA and 20 µl of 2 x hybridization buffer, and subjected to a hybridization at 68 °C for 2 hours (short hybridization [SH]). After removal of biotinylated double-stranded DNA, subtracted cDNA
20 was ligated into BamHI/XhoI site of chloramphenicol resistant pBCSK⁺ (Stratagene, La Jolla, CA 92037) and transformed into ElectroMax *E. coli* DH10B cells by electroporation to generate a prostate tumor specific subtracted cDNA library (referred to as "prostate subtraction 1").

To analyze the subtracted cDNA library, plasmid DNA was prepared from 100 independent clones, randomly picked from the subtracted prostate tumor specific library and
25 grouped based on insert size. Representative cDNA clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A (Foster City, CA). Six cDNA clones, hereinafter referred to as F1-13, F1-12, F1-16, H1-1, H1-9 and H1-4, were shown to be abundant in the subtracted prostate-specific cDNA library. The determined 3' and 5' cDNA sequences for F1-12 are provided in SEQ ID NO: 2 and 3, respectively,
30 with determined 3' cDNA sequences for F1-13, F1-16, H1-1, H1-9 and H1-4 being provided in SEQ ID NO: 1 and 4-7, respectively.

The cDNA sequences for the isolated clones were compared to known sequences in the gene bank using the EMBL and GenBank databases (release 96). Four of the prostate tumor cDNA clones, F1-13, F1-16, H1-1, and H1-4, were determined to encode the following previously identified proteins: prostate specific antigen (PSA), human glandular kallikrein, human tumor expression enhanced gene, and mitochondria cytochrome C oxidase subunit II. H1-9 was found to be identical to a previously identified human autonomously replicating sequence. No significant homologies to the cDNA sequence for F1-12 were found.

Subsequent studies led to the isolation of a full-length cDNA sequence for F1-12. This sequence is provided in SEQ ID NO: 107, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 108.

To clone less abundant prostate tumor specific genes, cDNA library subtraction was performed by subtracting the prostate tumor cDNA library described above with the normal pancreas cDNA library and with the three most abundant genes in the previously subtracted prostate tumor specific cDNA library: human glandular kallikrein, prostate specific antigen (PSA), and mitochondria cytochrome C oxidase subunit II. Specifically, 1 μ g each of human glandular kallikrein, PSA and mitochondria cytochrome C oxidase subunit II cDNAs in pCDNA3.1 were added to the driver DNA and subtraction was performed as described above to provide a second subtracted cDNA library hereinafter referred to as the "subtracted prostate tumor specific cDNA library with spike".

Twenty-two cDNA clones were isolated from the subtracted prostate tumor specific cDNA library with spike. The determined 3' and 5' cDNA sequences for the clones referred to as J1-17, L1-12, N1-1862, J1-13, J1-19, J1-25, J1-24, K1-58, K1-63, L1-4 and L1-14 are provided in SEQ ID NOS: 8-9, 10-11, 12-13, 14-15, 16-17, 18-19, 20-21, 22-23, 24-25, 26-27 and 28-29, respectively. The determined 3' cDNA sequences for the clones referred to as J1-12, J1-16, J1-21, K1-48, K1-55, L1-2, L1-6, N1-1858, N1-1860, N1-1861, N1-1864 are provided in SEQ ID NOS: 30-40, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to three of the five most abundant DNA species, (J1-17, L1-12 and N1-1862; SEQ ID NOS: 8-9, 10-11 and 12-13, respectively). Of the remaining two most abundant species, one (J1-12; SEQ ID NO:30) was found to be identical to the previously identified human pulmonary surfactant-associated protein, and the other (K1-48; SEQ ID NO:33) was determined to have some homology to *R. norvegicus* mRNA for 2-arylpropionyl-CoA epimerase. Of the 17 less abundant cDNA clones isolated from the subtracted prostate tumor specific cDNA

library with spike, four (J1-16, K1-55, L1-6 and N1-1864; SEQ ID NOS:31, 34, 36 and 40, respectively) were found to be identical to previously identified sequences, two (J1-21 and N1-1860; SEQ ID NOS: 32 and 38, respectively) were found to show some homology to non-human sequences, and two (L1-2 and N1-1861; SEQ ID NOS: 35 and 39, respectively) were found to show
5 some homology to known human sequences. No significant homologies were found to the polypeptides J1-13, J1-19, J1-24, J1-25, K1-58, K1-63, L1-4, L1-14 (SEQ ID NOS: 14-15, 16-17, 20-21, 18-19, 22-23, 24-25, 26-27, 28-29, respectively).

Subsequent studies led to the isolation of full length cDNA sequences for J1-17, L1-12 and N1-1862 (SEQ ID NOS: 109-111, respectively). The corresponding predicted amino acid
10 sequences are provided in SEQ ID NOS: 112-114. L1-12 is also referred to as P501S.

In a further experiment, four additional clones were identified by subtracting a prostate tumor cDNA library with normal prostate cDNA prepared from a pool of three normal prostate poly A+ RNA (referred to as "prostate subtraction 2"). The determined cDNA sequences for these clones, hereinafter referred to as U1-3064, U1-3065, V1-3692 and 1A-3905, are provided
15 in SEQ ID NO: 69-72, respectively. Comparison of the determined sequences with those in the gene bank revealed no significant homologies to U1-3065.

A second subtraction with spike (referred to as "prostate subtraction spike 2") was performed by subtracting a prostate tumor specific cDNA library with spike with normal pancreas cDNA library and further spiked with PSA, J1-17, pulmonary surfactant-associated protein,
20 mitochondrial DNA, cytochrome c oxidase subunit II, N1-1862, autonomously replicating sequence, L1-12 and tumor expression enhanced gene. Four additional clones, hereinafter referred to as V1-3686, R1-2330, 1B-3976 and V1-3679, were isolated. The determined cDNA sequences for these clones are provided in SEQ ID NO:73-76, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to V1-3686 and R1-2330.

Further analysis of the three prostate subtractions described above (prostate subtraction 2, subtracted prostate tumor specific cDNA library with spike, and prostate subtraction spike 2) resulted in the identification of sixteen additional clones, referred to as 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1G-4734, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4810, 1I-4811, 1J-4876, 1K-4884 and 1K-4896. The determined cDNA sequences for these clones are provided in
30 SEQ ID NOS: 77-92, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to 1G-4741, 1G-4734, 1I-4807, 1J-4876 and 1K-4896 (SEQ ID NOS: 79, 81, 87, 90 and 92, respectively). Further analysis of the isolated

clones led to the determination of extended cDNA sequences for 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4807, 1J-4876, 1K-4884 and 1K-4896, provided in SEQ ID NOS: 179-188 and 191-193, respectively, and to the determination of additional partial cDNA sequences for 1I-4810 and 1I-4811, provided in SEQ ID NOS: 189 and 190, respectively.

Additional studies with prostate subtraction spike 2 resulted in the isolation of three more clones. Their sequences were determined as described above and compared to the most recent GenBank. All three clones were found to have homology to known genes, which are Cysteine-rich protein, KIAA0242, and KIAA0280 (SEQ ID NO: 317, 319, and 320, respectively). Further analysis of these clones by Synteni microarray (Synteni, Palo Alto, CA) demonstrated that all three clones were over-expressed in most prostate tumors and prostate BPH, as well as in the majority of normal prostate tissues tested, but low expression in all other normal tissues.

An additional subtraction was performed by subtracting a normal prostate cDNA library with normal pancreas cDNA (referred to as "prostate subtraction 3"). This led to the identification of six additional clones referred to as 1G-4761, 1G-4762, 1H-4766, 1H-4770, 1H-4771 and 1H-4772 (SEQ ID NOS: 93-98). Comparison of these sequences with those in the gene bank revealed no significant homologies to 1G-4761 and 1H-4771 (SEQ ID NOS: 93 and 97, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4761, 1G-4762, 1H-4766 and 1H-4772 provided in SEQ ID NOS: 194-196 and 199, respectively, and to the determination of additional partial cDNA sequences for 1H-4770 and 1H-4771, provided in SEQ ID NOS: 197 and 198, respectively.

Subtraction of a prostate tumor cDNA library, prepared from a pool of polyA⁺ RNA from three prostate cancer patients, with a normal pancreas cDNA library (prostate subtraction 4) led to the identification of eight clones, referred to as 1D-4297, 1D-4309, 1D.1-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280 (SEQ ID NOS: 99-107). These sequences were compared to those in the gene bank as described above. No significant homologies were found to 1D-4283 and 1D-4304 (SEQ ID NOS: 103 and 104, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1D-4309, 1D.1-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280, provided in SEQ ID NOS: 200-206, respectively.

cDNA clones isolated in prostate subtraction 1 and prostate subtraction 2, described above, were colony PCR amplified and their mRNA expression levels in prostate tumor, normal prostate and in various other normal tissues were determined using microarray technology (Synteni,

Palo Alto, CA). Briefly, the PCR amplification products were dotted onto slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed, and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes, the slides scanned and fluorescence intensity was measured. This intensity correlates with the hybridization intensity. Two clones (referred to as P509S and P510S) were found to be over-expressed in prostate tumor and normal prostate and expressed at low levels in all other normal tissues tested (liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon). The determined cDNA sequences for P509S and P510S are provided in SEQ ID NO: 223 and 224, respectively. Comparison of these sequences with those in the gene bank as described above, revealed some homology to previously identified ESTs.

Additional, studies led to the isolation of the full-length cDNA sequence for P509S. This sequence is provided in SEQ ID NO: 332, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 339. Two variant full-length cDNA sequences for P510S are provided in SEQ ID NO: 535 and 536, with the corresponding predicted amino acid sequences being provided in SEQ ID NO: 537 and 538, respectively.

EXAMPLE 2

DETERMINATION OF TISSUE SPECIFICITY OF PROSTATE-SPECIFIC POLYPEPTIDES

Using gene specific primers, mRNA expression levels for the representative prostate-specific polypeptides F1-16, H1-1, J1-17 (also referred to as P502S), L1-12 (also referred to as P501S), F1-12 (also referred to as P504S) and N1-1862 (also referred to as P503S) were examined in a variety of normal and tumor tissues using RT-PCR.

Briefly, total RNA was extracted from a variety of normal and tumor tissues using Trizol reagent as described above. First strand synthesis was carried out using 1-2 μ g of total RNA with SuperScript II reverse transcriptase (BRL Life Technologies) at 42 °C for one hour. The cDNA was then amplified by PCR with gene-specific primers. To ensure the semi-quantitative nature of the RT-PCR, β -actin was used as an internal control for each of the tissues examined. First, serial dilutions of the first strand cDNAs were prepared and RT-PCR assays were performed using β -actin specific primers. A dilution was then chosen that enabled the linear range amplification of the β -actin template and which was sensitive enough to reflect the differences in the initial copy numbers. Using these conditions, the β -actin levels were determined for each

reverse transcription reaction from each tissue. DNA contamination was minimized by DNase treatment and by assuring a negative PCR result when using first strand cDNA that was prepared without adding reverse transcriptase.

mRNA Expression levels were examined in four different types of tumor tissue (prostate tumor from 2 patients, breast tumor from 3 patients, colon tumor, lung tumor), and sixteen different normal tissues, including prostate, colon, kidney, liver, lung, ovary, pancreas, skeletal muscle, skin, stomach, testes, bone marrow and brain. F1-16 was found to be expressed at high levels in prostate tumor tissue, colon tumor and normal prostate, and at lower levels in normal liver, skin and testes, with expression being undetectable in the other tissues examined. H1-1 was found to be expressed at high levels in prostate tumor, lung tumor, breast tumor, normal prostate, normal colon and normal brain, at much lower levels in normal lung, pancreas, skeletal muscle, skin, small intestine, bone marrow, and was not detected in the other tissues tested. J1-17 (P502S) and L1-12 (P501S) appear to be specifically over-expressed in prostate, with both genes being expressed at high levels in prostate tumor and normal prostate but at low to undetectable levels in all the other tissues examined. N1-1862 (P503S) was found to be over-expressed in 60% of prostate tumors and detectable in normal colon and kidney. The RT-PCR results thus indicate that F1-16, H1-1, J1-17 (P502S), N1-1862 (P503S) and L1-12 (P501S) are either prostate specific or are expressed at significantly elevated levels in prostate.

Further RT-PCR studies showed that F1-12 (P504S) is over-expressed in 60% of prostate tumors, detectable in normal kidney but not detectable in all other tissues tested. Similarly, R1-2330 was shown to be over-expressed in 40% of prostate tumors, detectable in normal kidney and liver, but not detectable in all other tissues tested. U1-3064 was found to be over-expressed in 60% of prostate tumors, and also expressed in breast and colon tumors, but was not detectable in normal tissues.

RT-PCR characterization of R1-2330, U1-3064 and 1D-4279 showed that these three antigens are over-expressed in prostate and/or prostate tumors.

Northern analysis with four prostate tumors, two normal prostate samples, two BPH prostates, and normal colon, kidney, liver, lung, pancreas, skeletal muscle, brain, stomach, testes, small intestine and bone marrow, showed that L1-12 (P501S) is over-expressed in prostate tumors and normal prostate, while being undetectable in other normal tissues tested. J1-17 (P502S) was detected in two prostate tumors and not in the other tissues tested. N1-1862 (P503S) was found to be over-expressed in three prostate tumors and to be expressed in normal prostate, colon and kidney,

but not in other tissues tested. F1-12 (P504S) was found to be highly expressed in two prostate tumors and to be undetectable in all other tissues tested.

The microarray technology described above was used to determine the expression levels of representative antigens described herein in prostate tumor, breast tumor and the following normal tissues: prostate, liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon. L1-12 (P501S) was found to be over-expressed in normal prostate and prostate tumor, with some expression being detected in normal skeletal muscle. Both J1-12 and F1-12 (P504S) were found to be over-expressed in prostate tumor, with expression being lower or undetectable in all other tissues tested. N1-1862 (P503S) was found to be expressed at high levels in prostate tumor and normal prostate, and at low levels in normal large intestine and normal colon, with expression being undetectable in all other tissues tested. R1-2330 was found to be over-expressed in prostate tumor and normal prostate, and to be expressed at lower levels in all other tissues tested. 1D-4279 was found to be over-expressed in prostate tumor and normal prostate, expressed at lower levels in normal spinal cord, and to be undetectable in all other tissues tested.

Further microarray analysis to specifically address the extent to which P501S (SEQ ID NO: 110) was expressed in breast tumor revealed moderate over-expression not only in breast tumor, but also in metastatic breast tumor (2/31), with negligible to low expression in normal tissues. This data suggests that P501S may be over-expressed in various breast tumors as well as in prostate tumors.

The expression levels of 32 ESTs (expressed sequence tags) described by Vasmatzis *et al.* (*Proc. Natl. Acad. Sci. USA* 95:300-304, 1998) in a variety of tumor and normal tissues were examined by microarray technology as described above. Two of these clones (referred to as P1000C and P1001C) were found to be over-expressed in prostate tumor and normal prostate, and expressed at low to undetectable levels in all other tissues tested (normal aorta, thymus, resting and activated PBMC, epithelial cells, spinal cord, adrenal gland, fetal tissues, skin, salivary gland, large intestine, bone marrow, liver, lung, dendritic cells, stomach, lymph nodes, brain, heart, small intestine, skeletal muscle, colon and kidney. The determined cDNA sequences for P1000C and P1001C are provided in SEQ ID NO: 384 and 472, respectively. The sequence of P1001C was found to show some homology to the previously isolated Human mRNA for JM27 protein. No significant homologies were found to the sequence of P1000C.

The expression of the polypeptide encoded by the full length cDNA sequence for F1-12 (also referred to as P504S; SEQ ID NO: 108) was investigated by immunohistochemical analysis. Rabbit-anti-P504S polyclonal antibodies were generated against the full length P504S protein by standard techniques. Subsequent isolation and characterization of the polyclonal antibodies were also performed by techniques well known in the art. Immunohistochemical analysis showed that the P504S polypeptide was expressed in 100% of prostate carcinoma samples tested (n=5).

The rabbit-anti-P504S polyclonal antibody did not appear to label benign prostate cells with the same cytoplasmic granular staining, but rather with light nuclear staining. Analysis of normal tissues revealed that the encoded polypeptide was found to be expressed in some, but not all normal human tissues. Positive cytoplasmic staining with rabbit-anti-P504S polyclonal antibody was found in normal human kidney, liver, brain, colon and lung-associated macrophages, whereas heart and bone marrow were negative.

This data indicates that the P504S polypeptide is present in prostate cancer tissues, and that there are qualitative and quantitative differences in the staining between benign prostatic hyperplasia tissues and prostate cancer tissues, suggesting that this polypeptide may be detected selectively in prostate tumors and therefore be useful in the diagnosis of prostate cancer.

EXAMPLE 3

ISOLATION AND CHARACTERIZATION OF PROSTATE-SPECIFIC POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA subtraction library, containing cDNA from normal prostate subtracted with ten other normal tissue cDNAs (brain, heart, kidney, liver, lung, ovary, placenta, skeletal muscle, spleen and thymus) and then submitted to a first round of PCR amplification, was purchased from Clontech. This library was subjected to a second round of PCR amplification, following the manufacturer's protocol. The resulting cDNA fragments were subcloned into the vector pT7 Blue T-vector (Novagen, Madison, WI) and transformed into XL-1 Blue MRF' *E. coli* (Stratagene). DNA was isolated from independent clones and sequenced using a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A.

Fifty-nine positive clones were sequenced. Comparison of the DNA sequences of these clones with those in the gene bank, as described above, revealed no significant homologies to 25 of these clones, hereinafter referred to as P5, P8, P9, P18, P20, P30, P34, P36, P38, P39, P42, P49, P50, P53, P55, P60, P64, P65, P73, P75, P76, P79 and P84. The determined cDNA sequences
5 for these clones are provided in SEQ ID NO: 41-45, 47-52 and 54-65, respectively. P29, P47, P68, P80 and P82 (SEQ ID NO: 46, 53 and 66-68, respectively) were found to show some degree of homology to previously identified DNA sequences. To the best of the inventors' knowledge, none of these sequences have been previously shown to be present in prostate.

Further studies using the PCR-based methodology described above resulted in the
10 isolation of more than 180 additional clones, of which 23 clones were found to show no significant homologies to known sequences. The determined cDNA sequences for these clones are provided in SEQ ID NO: 115-123, 127, 131, 137, 145, 147-151, 153, 156-158 and 160. Twenty-three clones (SEQ ID NO: 124-126, 128-130, 132-136, 138-144, 146, 152, 154, 155 and 159) were found to show some homology to previously identified ESTs. An additional ten clones (SEQ ID NO: 161-
15 170) were found to have some degree of homology to known genes. Larger cDNA clones containing the P20 sequence represent splice variants of a gene referred to as P703P. The determined DNA sequence for the variants referred to as DE1, DE13 and DE14 are provided in SEQ ID NOS: 171, 175 and 177, respectively, with the corresponding predicted amino acid sequences being provided in SEQ ID NO: 172, 176 and 178, respectively. The determined cDNA
20 sequence for an extended spliced form of P703 is provided in SEQ ID NO: 225. The DNA sequences for the splice variants referred to as DE2 and DE6 are provided in SEQ ID NOS: 173 and 174, respectively.

mRNA Expression levels for representative clones in tumor tissues (prostate (n=5), breast (n=2), colon and lung) normal tissues (prostate (n=5), colon, kidney, liver, lung (n=2), ovary
25 (n=2), skeletal muscle, skin, stomach, small intestine and brain), and activated and non-activated PBMC was determined by RT-PCR as described above. Expression was examined in one sample of each tissue type unless otherwise indicated.

P9 was found to be highly expressed in normal prostate and prostate tumor compared to all normal tissues tested except for normal colon which showed comparable expression. P20, a
30 portion of the P703P gene, was found to be highly expressed in normal prostate and prostate tumor, compared to all twelve normal tissues tested. A modest increase in expression of P20 in breast tumor (n=2), colon tumor and lung tumor was seen compared to all normal tissues except lung (1 of

2). Increased expression of P18 was found in normal prostate, prostate tumor and breast tumor compared to other normal tissues except lung and stomach. A modest increase in expression of P5 was observed in normal prostate compared to most other normal tissues. However, some elevated expression was seen in normal lung and PBMC. Elevated expression of P5 was also observed in prostate tumors (2 of 5), breast tumor and one lung tumor sample. For P30, similar expression levels were seen in normal prostate and prostate tumor, compared to six of twelve other normal tissues tested. Increased expression was seen in breast tumors, one lung tumor sample and one colon tumor sample, and also in normal PBMC. P29 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to the majority of normal tissues. However, substantial expression of P29 was observed in normal colon and normal lung (2 of 2). P80 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to all other normal tissues tested, with increased expression also being seen in colon tumor.

Further studies resulted in the isolation of twelve additional clones, hereinafter referred to as 10-d8, 10-h10, 11-c8, 7-g6, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3, 8-h11, 9-f12 and 9-f3. The determined DNA sequences for 10-d8, 10-h10, 11-c8, 8-d4, 8-d9, 8-h11, 9-f12 and 9-f3 are provided in SEQ ID NO: 207, 208, 209, 216, 217, 220, 221 and 222, respectively. The determined forward and reverse DNA sequences for 7-g6, 8-b5, 8-b6 and 8-g3 are provided in SEQ ID NO: 210 and 211; 212 and 213; 214 and 215; and 218 and 219, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to the sequence of 9-f3. The clones 10-d8, 11-c8 and 8-h11 were found to show some homology to previously isolated ESTs, while 10-h10, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3 and 9-f12 were found to show some homology to previously identified genes. Further characterization of 7-G6 and 8-G3 showed identity to the known genes PAP and PSA, respectively.

mRNA expression levels for these clones were determined using the micro-array technology described above. The clones 7-G6, 8-G3, 8-B5, 8-B6, 8-D4, 8-D9, 9-F3, 9-F12, 9-H3, 10-A2, 10-A4, 11-C9 and 11-F2 were found to be over-expressed in prostate tumor and normal prostate, with expression in other tissues tested being low or undetectable. Increased expression of 8-F11 was seen in prostate tumor and normal prostate, bladder, skeletal muscle and colon. Increased expression of 10-H10 was seen in prostate tumor and normal prostate, bladder, lung, colon, brain and large intestine. Increased expression of 9-B1 was seen in prostate tumor, breast tumor, and normal prostate, salivary gland, large intestine and skin, with increased expression of 11-C8 being seen in prostate tumor, and normal prostate and large intestine.

An additional cDNA fragment derived from the PCR-based normal prostate subtraction, described above, was found to be prostate specific by both micro-array technology and RT-PCR. The determined cDNA sequence of this clone (referred to as 9-A11) is provided in SEQ ID NO: 226. Comparison of this sequence with those in the public databases revealed 99% identity to the known gene HOXB13.

Further studies led to the isolation of the clones 8-C6 and 8-H7. The determined cDNA sequences for these clones are provided in SEQ ID NO: 227 and 228, respectively. These sequences were found to show some homology to previously isolated ESTs.

PCR and hybridization-based methodologies were employed to obtain longer cDNA sequences for clone P20 (also referred to as P703P), yielding three additional cDNA fragments that progressively extend the 5' end of the gene. These fragments, referred to as P703PDE5, P703P6.26, and P703PX-23 (SEQ ID NO: 326, 328 and 330, with the predicted corresponding amino acid sequences being provided in SEQ ID NO: 327, 329 and 331, respectively) contain additional 5' sequence. P703PDE5 was recovered by screening of a cDNA library (#141-26) with a portion of P703P as a probe. P703P6.26 was recovered from a mixture of three prostate tumor cDNAs and P703PX_23 was recovered from cDNA library (#438-48). Together, the additional sequences include all of the putative mature serine protease along with part of the putative signal sequence. The putative full-length cDNA sequence for P703P is provided in SEQ ID NO: 524, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 525.

Further studies using a PCR-based subtraction library of a prostate tumor pool subtracted against a pool of normal tissues (referred to as JP: PCR subtraction) resulted in the isolation of thirteen additional clones, seven of which did not share any significant homology to known GenBank sequences. The determined cDNA sequences for these seven clones (P711P, P712P, novel 23, P774P, P775P, P710P and P768P) are provided in SEQ ID NO: 307-311, 313 and 315, respectively. The remaining six clones (SEQ ID NO: 316 and 321-325) were shown to share some homology to known genes. By microarray analysis, all thirteen clones showed three or more fold over-expression in prostate tissues, including prostate tumors, BPH and normal prostate as compared to normal non-prostate tissues. Clones P711P, P712P, novel 23 and P768P showed over-expression in most prostate tumors and BPH tissues tested (n=29), and in the majority of normal prostate tissues (n=4), but background to low expression levels in all normal tissues. Clones P774P, P775P and P710P showed comparatively lower expression and expression in fewer prostate tumors and BPH samples, with negative to low expression in normal prostate.

The full-length cDNA for P711P was obtained by employing the partial sequence of SEQ ID NO: 307 to screen a prostate cDNA library. Specifically, a directionally cloned prostate cDNA library was prepared using standard techniques. One million colonies of this library were plated onto LB/Amp plates. Nylon membrane filters were used to lift these colonies, and the cDNAs which were picked up by these filters were denatured and cross-linked to the filters by UV light. The P711P cDNA fragment of SEQ ID NO: 307 was radio-labeled and used to hybridize with these filters. Positive clones were selected, and cDNAs were prepared and sequenced using an automatic Perkin Elmer/Applied Biosystems sequencer. The determined full-length sequence of P711P is provided in SEQ ID NO: 382, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 383.

Using PCR and hybridization-based methodologies, additional cDNA sequence information was derived for two clones described above, 11-C9 and 9-F3, herein after referred to as P707P and P714P, respectively (SEQ ID NO: 333 and 334). After comparison with the most recent GenBank, P707P was found to be a splice variant of the known gene HoxB13. In contrast, no significant homologies to P714P were found.

Clones 8-B3, P89, P98, P130 and P201 (as disclosed in U.S. Patent Application No. 09/020,956, filed February 9, 1998) were found to be contained within one contiguous sequence, referred to as P705P (SEQ ID NO: 335, with the predicted amino acid sequence provided in SEQ ID NO: 336), which was determined to be a splice variant of the known gene NKX 3.1.

Further studies on P775P resulted in the isolation of four additional sequences (SEQ ID NO: 473-476) which are all splice variants of the P775P gene. The sequence of SEQ ID NO: 474 was found to contain two open reading frames (ORFs). The predicted amino acid sequences encoded by these ORFs are provided in SEQ ID NO: 477 and 478. The cDNA sequence of SEQ ID NO: 475 was found to contain an ORF which encodes the amino acid sequence of SEQ ID NO: 479. The cDNA sequence of SEQ ID NO: 473 was found to contain four ORFs. The predicted amino acid sequences encoded by these ORFs are provided in SEQ ID NO: 480-483.

Subsequent studies led to the identification of a genomic region on chromosome 22q11.2, known as the Cat Eye Syndrome region, that contains the five prostate genes P704P, P712P, P774P, P775P and B305D. The relative location of each of these five genes within the genomic region is shown in Fig. 10. This region may therefore be associated with malignant tumors, and other potential tumor genes may be contained within this region. These studies also led

to the identification of a potential open reading frame (ORF) for P775P (provided in SEQ ID NO: 533), which encodes the amino acid sequence of SEQ ID NO: 534.

EXAMPLE 4

SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems 430A peptide synthesizer using Fmoc chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

EXAMPLE 5

FURTHER ISOLATION AND CHARACTERIZATION OF PROSTATE-SPECIFIC POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA library generated from prostate primary tumor mRNA as described above was subtracted with cDNA from normal prostate. The subtraction was performed using a PCR-based protocol (Clontech), which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, SalI and StuI). This digestion resulted in an average cDNA size of 600 bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. This modification did not affect the

subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters.

The tester and driver libraries were then hybridized using excess driver cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with adaptor-specific primers.

The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step was then performed, to reduce background and further enrich differentially expressed sequences.

This PCR-based subtraction technique normalizes differentially expressed cDNAs so that rare transcripts that are overexpressed in prostate tumor tissue may be recoverable. Such transcripts would be difficult to recover by traditional subtraction methods.

In addition to genes known to be overexpressed in prostate tumor, seventy-seven further clones were identified. Sequences of these partial cDNAs are provided in SEQ ID NO: 29 to 305. Most of these clones had no significant homology to database sequences. Exceptions were JPTPN23 (SEQ ID NO: 231; similarity to pig valosin-containing protein), JPTPN30 (SEQ ID NO: 234; similarity to rat mRNA for proteasome subunit), JPTPN45 (SEQ ID NO: 243; similarity to rat *norvegicus* cytosolic NADP-dependent isocitrate dehydrogenase), JPTPN46 (SEQ ID NO: 244; similarity to human subclone H8 4 d4 DNA sequence), JP1D6 (SEQ ID NO: 265; similarity to *G. gallus* dynein light chain-A), JP8D6 (SEQ ID NO: 288; similarity to human BAC clone RG016J04), JP8F5 (SEQ ID NO: 289; similarity to human subclone H8 3 b5 DNA sequence), and JP8E9 (SEQ ID NO: 299; similarity to human Alu sequence).

Additional studies using the PCR-based subtraction library consisting of a prostate tumor pool subtracted against a normal prostate pool (referred to as PT-PN PCR subtraction) yielded three additional clones. Comparison of the cDNA sequences of these clones with the most

recent release of GenBank revealed no significant homologies to the two clones referred to as P715P and P767P (SEQ ID NO: 312 and 314). The remaining clone was found to show some homology to the known gene KIAA0056 (SEQ ID NO: 318). Using microarray analysis to measure mRNA expression levels in various tissues, all three clones were found to be over-expressed in prostate tumors and BPH tissues. Specifically, clone P715P was over-expressed in most prostate tumors and BPH tissues by a factor of three or greater, with elevated expression seen in the majority of normal prostate samples and in fetal tissue, but negative to low expression in all other normal tissues. Clone P767P was over-expressed in several prostate tumors and BPH tissues, with moderate expression levels in half of the normal prostate samples, and background to low expression in all other normal tissues tested.

Further analysis, by microarray as described above, of the PT-PN PCR subtraction library and of a DNA subtraction library containing cDNA from prostate tumor subtracted with a pool of normal tissue cDNAs, led to the isolation of 27 additional clones (SEQ ID NO: 340-365 and 381) which were determined to be over-expressed in prostate tumor. The clones of SEQ ID NO: 341, 342, 345, 347, 348, 349, 351, 355-359, 361, 362 and 364 were also found to be expressed in normal prostate. Expression of all 26 clones in a variety of normal tissues was found to be low or undetectable, with the exception of P544S (SEQ ID NO: 356) which was found to be expressed in small intestine. Of the 26 clones, 10 (SEQ ID NO: 340-349) were found to show some homology to previously identified sequences. No significant homologies were found to the clones of SEQ ID NO: 350, 351 and 353-365.

Further studies on the clone of SEQ ID NO: 352 (referred to as P790P) led to the isolation of the full-length cDNA sequence of SEQ ID NO: 526. The corresponding predicted amino acid is provided in SEQ ID NO: 527. Data from two quantitative PCR experiments indicated that P790P is over-expressed in 11/15 tested prostate tumor samples and is expressed at low levels in spinal cord, with no expression being seen in all other normal samples tested. Data from further PCR experiments and microarray experiments showed over-expression in normal prostate and prostate tumor with little or no expression in other tissues tested. P790P was subsequently found to show significant homology to a previously identified G-protein coupled prostate tissue receptor.

EXAMPLE 6

PEPTIDE PRIMING OF MICE AND PROPAGATION OF CTL LINES

5 6.1. This Example illustrates the preparation of a CTL cell line specific for cells expressing the P502S gene.

Mice expressing the transgene for human HLA A2Kb (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with P2S#12 peptide (VLGWVAEL; SEQ ID NO: 306), which is derived from the P502S gene (also referred to herein as J1-17, SEQ ID
10 NO: 8), as described by Theobald et al., *Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995 with the following modifications. Mice were immunized with 100µg of P2S#12 and 120µg of an I-A^b binding peptide derived from hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and using a nylon mesh single cell suspensions prepared. Cells were then resuspended at 6×10^6 cells/ml in complete media (RPMI-1640; Gibco
15 BRL, Gaithersburg, MD) containing 10% FCS, 2mM Glutamine (Gibco BRL), sodium pyruvate (Gibco BRL), non-essential amino acids (Gibco BRL), 2×10^{-5} M 2-mercaptoethanol, 50U/ml penicillin and streptomycin, and cultured in the presence of irradiated (3000 rads) P2S#12-pulsed (5mg/ml P2S#12 and 10mg/ml β2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7µg/ml dextran sulfate and 25µg/ml LPS for 3 days). Six days later, cells ($5 \times$
20 10^5 /ml) were restimulated with 2.5×10^6 /ml peptide pulsed irradiated (20,000 rads) EL4A2Kb cells (Sherman et al, *Science* 258:815-818, 1992) and 3×10^6 /ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20U/ml IL-2. Cells continued to be restimulated on a weekly basis as described, in preparation for cloning the line.

P2S#12 line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb
25 tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, clones that were growing were isolated and maintained in culture. Several of these clones demonstrated significantly higher reactivity (lysis) against human fibroblasts (HLA A2Kb expressing) transduced with P502S than against control fibroblasts. An example is presented in
30 Figure 1.

This data indicates that P2S #12 represents a naturally processed epitope of the P502S protein that is expressed in the context of the human HLA A2Kb molecule.

6.2. This Example illustrates the preparation of murine CTL lines and CTL clones specific for cells expressing the P501S gene.

This series of experiments were performed similarly to that described above. Mice were immunized with the P1S#10 peptide (SEQ ID NO: 337), which is derived from the P501S gene (also referred to herein as L1-12, SEQ ID NO: 110). The P1S#10 peptide was derived by analysis of the predicted polypeptide sequence for P501S for potential HLA-A2 binding sequences as defined by published HLA-A2 binding motifs (Parker, KC, *et al*, *J. Immunol.*, 152:163, 1994). P1S#10 peptide was synthesized as described in Example 4, and empirically tested for HLA-A2 binding using a T cell based competition assay. Predicted A2 binding peptides were tested for their ability to compete HLA-A2 specific peptide presentation to an HLA-A2 restricted CTL clone (D150M58), which is specific for the HLA-A2 binding influenza matrix peptide fluM58. D150M58 CTL secretes TNF in response to self-presentation of peptide fluM58. In the competition assay, test peptides at 100-200 µg/ml were added to cultures of D150M58 CTL in order to bind HLA-A2 on the CTL. After thirty minutes, CTL cultured with test peptides, or control peptides, were tested for their antigen dose response to the fluM58 peptide in a standard TNF bioassay. As shown in Figure 3, peptide P1S#10 competes HLA-A2 restricted presentation of fluM58, demonstrating that peptide P1S#10 binds HLA-A2.

Mice expressing the transgene for human HLA A2Kb were immunized as described by Theobald *et al.* (*Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995) with the following modifications. Mice were immunized with 62.5µg of P1S #10 and 120µg of an I-A^b binding peptide derived from Hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and single cell suspensions prepared using a nylon mesh. Cells were then resuspended at 6×10^6 cells/ml in complete media (as described above) and cultured in the presence of irradiated (3000 rads) P1S#10-pulsed (2µg/ml P1S#10 and 10mg/ml β2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7µg/ml dextran sulfate and 25µg/ml LPS for 3 days). Six days later cells (5×10^5 /ml) were restimulated with 2.5×10^6 /ml peptide-pulsed irradiated (20,000 rads) EL4A2Kb cells, as described above, and 3×10^6 /ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20 U/ml IL-2. Cells were restimulated on a weekly basis in preparation for cloning. After three rounds of *in vitro* stimulations, one line was generated that recognized P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat targets as shown in Figure 4.

A P1S#10-specific CTL line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, viable clones were isolated and maintained in culture. As shown in Figure 5, five of these clones demonstrated specific cytolytic reactivity against P501S-transduced Jurkat A2Kb targets. This data indicates that P1S#10 represents a naturally processed epitope of the P501S protein that is expressed in the context of the human HLA-A2.1 molecule.

EXAMPLE 7

PRIMING OF CTL *IN VIVO* USING NAKED DNA IMMUNIZATION WITH A PROSTATE ANTIGEN

The prostate-specific antigen L1-12, as described above, is also referred to as P501S. HLA A2Kb Tg mice (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with 100 μ g P501S in the vector VR1012 either intramuscularly or intradermally. The mice were immunized three times, with a two week interval between immunizations. Two weeks after the last immunization, immune spleen cells were cultured with Jurkat A2Kb-P501S transduced stimulator cells. CTL lines were stimulated weekly. After two weeks of *in vitro* stimulation, CTL activity was assessed against P501S transduced targets. Two out of 8 mice developed strong anti-P501S CTL responses. These results demonstrate that P501S contains at least one naturally processed HLA-A2-restricted CTL epitope.

EXAMPLE 8

ABILITY OF HUMAN T CELLS TO RECOGNIZE PROSTATE-SPECIFIC POLYPEPTIDES

This Example illustrates the ability of T cells specific for a prostate tumor polypeptide to recognize human tumor.

Human CD8⁺ T cells were primed *in vitro* to the P2S-12 peptide (SEQ ID NO: 306) derived from P502S (also referred to as J1-17) using dendritic cells according to the protocol of Van Tsai et al. (*Critical Reviews in Immunology* 18:65-75, 1998). The resulting CD8⁺ T cell microcultures were tested for their ability to recognize the P2S-12 peptide presented by autologous fibroblasts or fibroblasts which were transduced to express the P502S gene in a γ -interferon

ELISPOT assay (*see* Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). Briefly, titrating numbers of T cells were assayed in duplicate on 10^4 fibroblasts in the presence of 3 $\mu\text{g/ml}$ human β_2 -microglobulin and 1 $\mu\text{g/ml}$ P2S-12 peptide or control E75 peptide. In addition, T cells were simultaneously assayed on autologous fibroblasts transduced with the P502S gene or as a control, fibroblasts transduced with HER-2/*neu*. Prior to the assay, the fibroblasts were treated with 10 ng/ml γ -interferon for 48 hours to upregulate class I MHC expression. One of the microcultures (#5) demonstrated strong recognition of both peptide pulsed fibroblasts as well as transduced fibroblasts in a γ -interferon ELISPOT assay. Figure 2A demonstrates that there was a strong increase in the number of γ -interferon spots with increasing numbers of T cells on fibroblasts pulsed with the P2S-12 peptide (solid bars) but not with the control E75 peptide (open bars). This shows the ability of these T cells to specifically recognize the P2S-12 peptide. As shown in Figure 2B, this microculture also demonstrated an increase in the number of γ -interferon spots with increasing numbers of T cells on fibroblasts transduced to express the P502S gene but not the HER-2/*neu* gene. These results provide additional confirmatory evidence that the P2S-12 peptide is a naturally processed epitope of the P502S protein. Furthermore, this also demonstrates that there exists in the human T cell repertoire, high affinity T cells which are capable of recognizing this epitope. These T cells should also be capable of recognizing human tumors which express the P502S gene.

EXAMPLE 9

ELICITATION OF PROSTATE ANTIGEN-SPECIFIC CTL RESPONSES IN HUMAN BLOOD

This Example illustrates the ability of a prostate-specific antigen to elicit a CTL response in blood of normal humans.

Autologous dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal donors by growth for five days in RPMI medium containing 10% human serum, 50 ng/ml GM-CSF and 30 ng/ml IL-4. Following culture, DC were infected overnight with recombinant P501S-expressing vaccinia virus at an M.O.I. of 5 and matured for 8 hours by the addition of 2 micrograms/ml CD40 ligand. Virus was inactivated by UV irradiation, CD8⁺ cells were isolated by positive selection using magnetic beads, and priming cultures were initiated in 24-well plates. Following five stimulation cycles using autologous fibroblasts retrovirally transduced

to express P501S and CD80, CD8+ lines were identified that specifically produced interferon-gamma when stimulated with autologous P501S-transduced fibroblasts. The P501S-specific activity of cell line 3A-1 could be maintained following additional stimulation cycles on autologous B-LCL transduced with P501S. Line 3A-1 was shown to specifically recognize autologous B-LCL transduced to express P501S, but not EGFP-transduced autologous B-LCL, as measured by cytotoxicity assays (⁵¹Cr release) and interferon-gamma production (Interferon-gamma Elispot; *see* above and Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). The results of these assays are presented in Figures 6A and 6B.

EXAMPLE 10

IDENTIFICATION OF A NATURALLY PROCESSED CTL EPITOPE CONTAINED WITHIN A PROSTATE-SPECIFIC ANTIGEN

The 9-mer peptide p5 (SEQ ID NO: 338) was derived from the P703P antigen (also referred to as P20). The p5 peptide is immunogenic in human HLA-A2 donors and is a naturally processed epitope. Antigen specific human CD8+ T cells can be primed following repeated *in vitro* stimulations with monocytes pulsed with p5 peptide. These CTL specifically recognize p5-pulsed and P703P-transduced target cells in both ELISPOT (as described above) and chromium release assays. Additionally, immunization of HLA-A2Kb transgenic mice with p5 leads to the generation of CTL lines which recognize a variety of HLA-A2Kb or HLA-A2 transduced target cells expressing P703P.

Initial studies demonstrating that p5 is a naturally processed epitope were done using HLA-A2Kb transgenic mice. HLA-A2Kb transgenic mice were immunized subcutaneously in the footpad with 100 µg of p5 peptide together with 140 µg of hepatitis B virus core peptide (a Th peptide) in Freund's incomplete adjuvant. Three weeks post immunization, spleen cells from immunized mice were stimulated *in vitro* with peptide-pulsed LPS blasts. CTL activity was assessed by chromium release assay five days after primary *in vitro* stimulation. Retrovirally transduced cells expressing the control antigen P703P and HLA-A2Kb were used as targets. CTL lines that specifically recognized both p5-pulsed targets as well as P703P-expressing targets were identified.

Human *in vitro* priming experiments demonstrated that the p5 peptide is immunogenic in humans. Dendritic cells (DC) were differentiated from monocyte cultures derived

from PBMC of normal human donors by culturing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, the DC were pulsed with 1 ug/ml p5 peptide and cultured with CD8+ T cell enriched PBMC. CTL lines were restimulated on a weekly basis with p5-pulsed monocytes. Five to six weeks after initiation of the CTL cultures, CTL recognition of p5-pulsed target cells was demonstrated. CTL were additionally shown to recognize human cells transduced to express P703P, demonstrating that p5 is a naturally processed epitope.

EXPRESSION OF A BREAST TUMOR-DERIVED ANTIGEN IN PROSTATE

Isolation of the antigen B305D from breast tumor by differential display is described in US Patent Application No. 08/700,014, filed August 20, 1996. Several different splice forms of this antigen were isolated. The determined cDNA sequences for these splice forms are provided in SEQ ID NO: 366-375, with the predicted amino acid sequences corresponding to the sequences of SEQ ID NO: 292, 298 and 301-303 being provided in SEQ ID NO: 299-306, respectively. In further studies, a splice variant of the cDNA sequence of SEQ ID NO: 366 was isolated which was found to contain an additional guanine residue at position 884 (SEQ ID NO: 530), leading to a frameshift in the open reading frame. The determined DNA sequence of this ORF is provided in SEQ ID NO: 531. This frameshift generates a protein sequence (provided in SEQ ID NO: 532) of 293 amino acids that contains the C-terminal domain common to the other isoforms of B305D but that differs in the N-terminal region.

The expression levels of B305D in a variety of tumor and normal tissues were examined by real time PCR and by Northern analysis. The results indicated that B305D is highly expressed in breast tumor, prostate tumor, normal prostate and normal testes, with expression being low or undetectable in all other tissues examined (colon tumor, lung tumor, ovary tumor, and normal bone marrow, colon, kidney, liver, lung, ovary, skin, small intestine, stomach).

GENERATION OF HUMAN CTL *IN VITRO* USING WHOLE GENE PRIMING AND STIMULATION TECHNIQUES WITH PROSTATE-SPECIFIC ANTIGEN

Using *in vitro* whole-gene priming with P501S-vaccinia infected DC (see, for example, Yee et al, *The Journal of Immunology*, 157(9):4079-86, 1996), human CTL lines were derived that specifically recognize autologous fibroblasts transduced with P501S (also known as L1-12), as determined by interferon- γ ELISPOT analysis as described above. Using a panel of
5 HLA-mismatched B-LCL lines transduced with P501S, these CTL lines were shown to be likely restricted to HLAB class I allele. Specifically, dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by growing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, DC were infected overnight with recombinant P501S vaccinia virus at a
10 multiplicity of infection (M.O.I) of five, and matured overnight by the addition of 3 μ g/ml CD40 ligand. Virus was inactivated by UV irradiation. CD8+ T cells were isolated using a magnetic bead system, and priming cultures were initiated using standard culture techniques. Cultures were restimulated every 7-10 days using autologous primary fibroblasts retrovirally transduced with P501S and CD80. Following four stimulation cycles, CD8+ T cell lines were identified that
15 specifically produced interferon- γ when stimulated with P501S and CD80-transduced autologous fibroblasts. A panel of HLA-mismatched B-LCL lines transduced with P501S were generated to define the restriction allele of the response. By measuring interferon- γ in an ELISPOT assay, the P501S specific response was shown to be likely restricted by HLA B alleles. These results demonstrate that a CD8+ CTL response to P501S can be elicited.

20 To identify the epitope(s) recognized, cDNA encoding P501S was fragmented by various restriction digests, and sub-cloned into the retroviral expression vector pBIB-KS. Retroviral supernatants were generated by transfection of the helper packaging line Phoenix-Ampho. Supernatants were then used to transduce Jurkat/A2Kb cells for CTL screening. CTL were screened in IFN-gamma ELISPOT assays against these A2Kb targets transduced with the "library" of P501S
25 fragments. Initial positive fragments P501S/H3 and P501S/F2 were sequenced and found to encode amino acids 106-553 and amino acids 136-547, respectively, of SEQ ID NO: 113. A truncation of H3 was made to encode amino acid residues 106-351 of SEQ ID NO: 113, which was unable to stimulate the CTL, thus localizing the epitope to amino acid residues 351-547. Additional fragments encoding amino acids 1-472 (Fragment A) and amino acids 1-351 (Fragment B) were
30 also constructed. Fragment A but not Fragment B stimulated the CTL thus localizing the epitope to amino acid residues 351-472. Overlapping 20-mer and 18-mer peptides representing this region were tested by pulsing Jurkat/A2Kb cells versus CTL in an IFN-gamma assay. Only peptides

P501S-369(20) and P501S-369(18) stimulated the CTL. Nine-mer and 10-mer peptides representing this region were synthesized and similarly tested. Peptide P501S-370 (SEQ ID NO: 539) was the minimal 9-mer giving a strong response. Peptide P501S-376 (SEQ ID NO: 540) also gave a weak response, suggesting that it might represent a cross-reactive epitope.

5 In subsequent studies, the ability of primary human B cells transduced with P501S to prime MHC class I-restricted, P501S-specific, autologous CD8 T cells was examined. Primary B cells were derived from PBMC of a homozygous HLA-A2 donor by culture in CD40 ligand and IL-4, transduced at high frequency with recombinant P501S in the vector pBIB, and selected with blastocidin-S. For *in vitro* priming, purified CD8⁺ T cells were cultured with autologous CD40
10 ligand + IL-4 derived, P501S-transduced B cells in a 96-well microculture format. These CTL microcultures were re-stimulated with P501S-transduced B cells and then assayed for specificity. Following this initial screen, microcultures with significant signal above background were cloned on autologous EBV-transformed B cells (BLCL), also transduced with P501S. Using IFN-gamma ELISPOT for detection, several of these CD8 T cell clones were found to be specific for P501S, as
15 demonstrated by reactivity to BLCL/P501S but not BLCL transduced with control antigen. It was further demonstrated that the anti-P501S CD8 T cell specificity is HLA-A2-restricted. First, antibody blocking experiments with anti-HLA-A,B,C monoclonal antibody (W6.32), anti-HLA-B,C monoclonal antibody (B1.23.2) and a control monoclonal antibody showed that only the anti-HLA-A,B,C antibody blocked recognition of P501S-expressing autologous BLCL. Secondly, the anti-
20 P501S CTL also recognized an HLA-A2 matched, heterologous BLCL transduced with P501S, but not the corresponding EGFP transduced control BLCL.

EXAMPLE 13

IDENTIFICATION OF PROSTATE-SPECIFIC ANTIGENS BY MICROARRAY ANALYSIS

25

This Example describes the isolation of certain prostate-specific polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in
30 prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 372 clones were identified, and 319 were successfully sequenced. Table I presents a summary of these clones, which are shown in SEQ ID NOs:385-400. Of these sequences

SEQ ID NOs:386, 389, 390 and 392 correspond to novel genes, and SEQ ID NOs: 393 and 396 correspond to previously identified sequences. The others (SEQ ID NOs:385, 387, 388, 391, 394, 395 and 397-400) correspond to known sequences, as shown in Table I.

5

Table I
Summary of Prostate Tumor Antigens

Known Genes	Previously Identified Genes	Novel Genes
T-cell gamma chain	P504S	23379 (SEQ ID NO:389)
Kallikrein	P1000C	23399 (SEQ ID NO:392)
Vector	P501S	23320 (SEQ ID NO:386)
CGI-82 protein mRNA (23319; SEQ ID NO:385)	P503S	23381 (SEQ ID NO:390)
PSA	P510S	
Ald. 6 Dehyd.	P784P	
L-Iditol-2 dehydrogenase (23376; SEQ ID NO:388)	P502S	
Ets transcription factor PDEF (22672; SEQ ID NO:398)	P706P	
hTGR (22678; SEQ ID NO:399)	19142.2, bangur.seq (22621; SEQ ID NO:396)	
KIAA0295(22685; SEQ ID NO:400)	5566.1 Wang (23404; SEQ ID NO:393)	
Prostatic Acid Phosphatase(22655; SEQ ID NO:397)	P712P	
transglutaminase (22611; SEQ ID NO:395)	P778P	
HDLBP (23508; SEQ ID NO:394)		
CGI-69 Protein(23367; SEQ ID NO:387)		
KIAA0122(23383; SEQ ID NO:391)		
TEEG		

CGI-82 showed 4.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 43% of prostate tumors, 25% normal prostate, not detected in other normal tissues tested. L-iditol-2 dehydrogenase showed 4.94 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 90% of prostate tumors, 100% of normal prostate, and not detected in other normal tissues tested. Ets transcription factor PDEF showed 5.55 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% prostate tumors, 25% normal prostate and not detected in other normal tissues tested. hTGR1 showed 9.11 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 63% of prostate tumors and is not detected in normal tissues tested including normal prostate. KIAA0295 showed 5.59 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% of prostate tumors, low to undetectable in normal tissues tested including normal prostate tissues. Prostatic acid phosphatase showed 9.14 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 67% of prostate tumors, 50% of normal prostate, and not detected in other normal tissues tested. Transglutaminase showed 14.84 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 30% of prostate tumors, 50% of normal prostate, and is not detected in other normal tissues tested. High density lipoprotein binding protein (HDLBP) showed 28.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% of normal prostate, and is undetectable in all other normal tissues tested. CGI-69 showed 3.56 fold over-expression in prostate tissues as compared to other normal tissues tested. It is a low abundant gene, detected in more than 90% of prostate tumors, and in 75% normal prostate tissues. The expression of this gene in normal tissues was very low. KIAA0122 showed 4.24 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 57% of prostate tumors, it was undetectable in all normal tissues tested including normal prostate tissues. 19142.2 bangur showed 23.25 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors and 100% of normal prostate. It was undetectable in other normal tissues tested. 5566.1 Wang showed 3.31 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% normal prostate and was also over-expressed in normal bone marrow, pancreas, and activated PBMC. Novel clone 23379 showed 4.86 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in 97%

of prostate tumors and 75% normal prostate and is undetectable in all other normal tissues tested. Novel clone 23399 showed 4.09 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 27% of prostate tumors and was undetectable in all normal tissues tested including normal prostate tissues. Novel clone 23320 showed 3.15 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in all prostate tumors and 50% of normal prostate tissues. It was also expressed in normal colon and trachea. Other normal tissues do not express this gene at high level.

EXAMPLE 14

IDENTIFICATION OF PROSTATE-SPECIFIC ANTIGENS BY ELECTRONIC SUBTRACTION

This Example describes the use of an electronic subtraction technique to identify prostate-specific antigens.

Potential prostate-specific genes present in the GenBank human EST database were identified by electronic subtraction (similar to that described by Vasmatizis et al., *Proc. Natl. Acad. Sci. USA* 95:300-304, 1998). The sequences of EST clones (43,482) derived from various prostate libraries were obtained from the GenBank public human EST database. Each prostate EST sequence was used as a query sequence in a BLASTN (National Center for Biotechnology Information) search against the human EST database. All matches considered identical (length of matching sequence >100 base pairs, density of identical matches over this region > 70%) were grouped (aligned) together in a cluster. Clusters containing more than 200 ESTs were discarded since they probably represented repetitive elements or highly expressed genes such as those for ribosomal proteins. If two or more clusters shared common ESTs, those clusters were grouped together into a "supercluster," resulting in 4,345 prostate superclusters.

Records for the 479 human cDNA libraries represented in the GenBank release were downloaded to create a database of these cDNA library records. These 479 cDNA libraries were grouped into three groups: Plus (normal prostate and prostate tumor libraries, and breast cell line libraries, in which expression was desired), Minus (libraries from other normal adult tissues, in which expression was not desirable), and Other (libraries from fetal tissue, infant tissue, tissues found only in women, non-prostate tumors and cell lines other than prostate cell lines, in which

expression was considered to be irrelevant). A summary of these library groups is presented in Table II.

Table II

Prostate cDNA Libraries and ESTs

Library	# of Libraries	# of ESTs
Plus	25	43,482
Normal	11	18,875
Tumor	11	21,769
Cell lines	3	2,838
Minus	166	
Other	287	

Each supercluster was analyzed in terms of the ESTs within the supercluster. The tissue source of each EST clone was noted and used to classify the superclusters into four groups:

- 10 Type 1- EST clones found in the Plus group libraries only; no expression detected in Minus or Other group libraries; Type 2- EST clones derived from the Plus and Other group libraries only; no expression detected in the Minus group; Type 3- EST clones derived from the Plus, Minus and Other group libraries, but the number of ESTs derived from the Plus group is higher than in either the Minus or Other groups; and Type 4- EST clones derived from Plus, Minus and Other group
- 15 libraries, but the number derived from the Plus group is higher than the number derived from the Minus group. This analysis identified 4,345 breast clusters (*see* Table III). From these clusters, 3,172 EST clones were ordered from Research Genetics, Inc., and were received as frozen glycerol stocks in 96-well plates.

Table III
Prostate Cluster Summary

Type	# of Superclusters	# of ESTs Ordered
1	688	677
2	2899	2484
3	85	11
4	673	0
Total	4345	3172

The EST clone inserts were PCR-amplified using amino-linked PCR primers for Synteni microarray analysis. When more than one PCR product was obtained for a particular clone, that PCR product was not used for expression analysis. In total, 2,528 clones from the electronic subtraction method were analyzed by microarray analysis to identify electronic subtraction breast clones that had high levels of tumor vs. normal tissue mRNA. Such screens were performed using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Within these analyses, the clones were arrayed on the chip, which was then probed with fluorescent probes generated from normal and tumor prostate cDNA, as well as various other normal tissues. The slides were scanned and the fluorescence intensity was measured.

Clones with an expression ratio greater than 3 (*i.e.*, the level in prostate tumor and normal prostate mRNA was at least three times the level in other normal tissue mRNA) were identified as prostate tumor-specific sequences (Table IV). The sequences of these clones are provided in SEQ ID NO: 401-453, with certain novel sequences shown in SEQ ID NO: 407, 413, 416-419, 422, 426, 427 and 450.

Table IV
Prostate-tumor Specific Clones

SEQ ID NO.	Sequence Designation	Comments
401	22545	previously identified P1000C
402	22547	previously identified P704P
403	22548	known
404	22550	known
405	22551	PSA
406	22552	prostate secretory protein 94
407	22553	novel
408	22558	previously identified P509S
409	22562	glandular kallikrein
410	22565	previously identified P1000C
411	22567	PAP
412	22568	B1006C (breast tumor antigen)
413	22570	novel
414	22571	PSA
415	22572	previously identified P706P
416	22573	novel
417	22574	novel
418	22575	novel
419	22580	novel
420	22581	PAP
421	22582	prostatic secretory protein 94
422	22583	novel
423	22584	prostatic secretory protein 94
424	22585	prostatic secretory protein 94
425	22586	known
426	22587	novel
427	22588	novel
428	22589	PAP
429	22590	known
430	22591	PSA
431	22592	known
432	22593	Previously identified P777P
433	22594	T cell receptor gamma chain
434	22595	Previously identified P705P
435	22596	Previously identified P707P
436	22847	PAP
437	22848	known
438	22849	prostatic secretory protein 57
439	22851	PAP

440	22852	PAP
441	22853	PAP
442	22854	previously identified P509S
443	22855	previously identified P705P
444	22856	previously identified P774P
445	22857	PSA
446	23601	previously identified P777P
447	23602	PSA
448	23605	PSA
449	23606	PSA
450	23612	novel
451	23614	PSA
452	23618	previously identified P1000C
453	23622	previously identified P705P

EXAMPLE 15

FURTHER IDENTIFICATION OF PROSTATE-SPECIFIC ANTIGENS BY MICROARRAY ANALYSIS

5

This Example describes the isolation of additional prostate-specific polypeptides from a prostate tumor cDNA library.

10 A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 142 clones were identified and sequenced. Certain of these clones are shown in SEQ ID NO: 454-467. Of these sequences, SEQ ID NO: 459-461 represent novel genes. The others (SEQ ID NO: 454-458 and 461-467) correspond to known sequences.

15

EXAMPLE 16

FURTHER CHARACTERIZATION OF PROSTATE-SPECIFIC ANTIGEN P710P

20

This Example describes the full length cloning of P710P.

The prostate cDNA library described above was screened with the P710P fragment described above. One million colonies were plated on LB/Ampicillin plates. Nylon membrane

filters were used to lift these colonies, and the cDNAs picked up by these filters were then denatured and cross-linked to the filters by UV light. The P710P fragment was radiolabeled and used to hybridize with the filters. Positive cDNA clones were selected and their cDNAs recovered and sequenced by an automatic Perkin Elmer/Applied Biosystems Division Sequencer. Four sequences were obtained, and are presented in SEQ ID NO: 468-471. These sequences appear to represent different splice variants of the P710P gene.

EXAMPLE 17

PROTEIN EXPRESSION OF THE PROSTATE-SPECIFIC ANTIGEN P501S

This example describes the expression and purification of the prostate-specific antigen P501S in *E. coli*, baculovirus and mammalian cells.

a) Expression in *E. coli*

Expression of the full-length form of P501S was attempted by first cloning P501S without the leader sequence (amino acids 36-553 of SEQ ID NO: 113) downstream of the first 30 amino acids of the *M. tuberculosis* antigen Ra12 (SEQ ID NO: 484) in pET17b. Specifically, P501S DNA was used to perform PCR using the primers AW025 (SEQ ID NO: 485) and AW003 (SEQ ID NO: 486). AW025 is a sense cloning primer that contains a HindIII site. AW003 is an antisense cloning primer that contains an EcoRI site. DNA amplification was performed using 5 µl 10X Pfu buffer, 1 µl 20 mM dNTPs, 1 µl each of the PCR primers at 10 µM concentration, 40 µl water, 1 µl Pfu DNA polymerase (Stratagene, La Jolla, CA) and 1 µl DNA at 100 ng/µl. Denaturation at 95°C was performed for 30 sec, followed by 10 cycles of 95°C for 30 sec, 60°C for 1 min and by 72°C for 3 min. 20 cycles of 95°C for 30 sec, 65°C for 1 min and by 72°C for 3 min, and lastly by 1 cycle of 72°C for 10 min. The PCR product was cloned to Ra12m/pET17b using HindIII and EcoRI. The sequence of the resulting fusion construct (referred to as Ra12-P501S-F) was confirmed by DNA sequencing.

The fusion construct was transformed into BL21(DE3)pLysE, pLysS and CodonPlus *E. coli* (Stratagene) and grown overnight in LB broth with kanamycin. The resulting culture was induced with IPTG. Protein was transferred to PVDF membrane and blocked with 5% non-fat milk (in PBS-Tween buffer), washed three times and incubated with mouse anti-His tag antibody (Clontech) for 1 hour. The membrane was washed 3 times and probed with HRP-Protein A

(Zymed) for 30 min. Finally, the membrane was washed 3 times and developed with ECL (Amersham). No expression was detected by Western blot. Similarly, no expression was detected by Western blot when the Ra12-P501S-F fusion was used for expression in BL21CodonPlus by CE6 phage (Invitrogen).

5 An N-terminal fragment of P501S (amino acids 36-325 of SEQ ID NO: 113) was cloned down-stream of the first 30 amino acids of the *M. tuberculosis* antigen Ra12 in pET17b as follows. P501S DNA was used to perform PCR using the primers AW025 (SEQ ID NO: 485) and AW027 (SEQ ID NO: 487). AW027 is an antisense cloning primer that contains an EcoRI site and a stop codon. DNA amplification was performed essentially as described above. The resulting PCR
10 product was cloned to Ra12 in pET17b at the HindIII and EcoRI sites. The fusion construct (referred to as Ra12-P501S-N) was confirmed by DNA sequencing.

 The Ra12-P501S-N fusion construct was used for expression in BL21(DE3)pLysE, pLysS and CodonPlus, essentially as described above. Using Western blot analysis, protein bands were observed at the expected molecular weight of 36 kDa. Some high molecular weight bands
15 were also observed, probably due to aggregation of the recombinant protein. No expression was detected by Western blot when the Ra12-P501S-F fusion was used for expression in BL21CodonPlus by CE6 phage.

 A fusion construct comprising a C-terminal portion of P501S (amino acids 257-553 of SEQ ID NO: 113) located down-stream of the first 30 amino acids of the *M. tuberculosis* antigen
20 Ra12 (SEQ ID NO: 484) was prepared as follows. P501S DNA was used to perform PCR using the primers AW026 (SEQ ID NO: 488) and AW003 (SEQ ID NO: 486). AW026 is a sense cloning primer that contains a HindIII site. DNA amplification was performed essentially as described above. The resulting PCR product was cloned to Ra12 in pET17b at the HindIII and EcoRI sites. The sequence for the fusion construct (referred to as Ra12-P501S-C) was confirmed.

25 The Ra12-P501S-C fusion construct was used for expression in BL21(DE3)pLysE, pLysS and CodonPlus, as described above. A small amount of protein was detected by Western blot, with some molecular weight aggregates also being observed. Expression was also detected by Western blot when the Ra12-P501S-C fusion was used for expression in BL21CodonPlus induced by CE6 phage.

b) Expression of P501S in Baculovirus

The Bac-to-Bac baculovirus expression system (BRL Life Technologies, Inc.) was used to express P501S protein in insect cells. Full-length P501S (SEQ ID NO: 113) was amplified by PCR and cloned into the XbaI site of the donor plasmid pFastBacI. The recombinant bacmid and baculovirus were prepared according to the manufacturer's instructions. The recombinant baculovirus was amplified in Sf9 cells and the high titer viral stocks were utilized to infect High Five cells (Invitrogen) to make the recombinant protein. The identity of the full-length protein was confirmed by N-terminal sequencing of the recombinant protein and by Western blot analysis (Figure 7). Specifically, 0.6 million High Five cells in 6-well plates were infected with either the unrelated control virus BV/ECD_PD (lane 2), with recombinant baculovirus for P501S at different amounts or MOIs (lanes 4-8), or were uninfected (lane 3). Cell lysates were run on SDS-PAGE under reducing conditions and analyzed by Western blot with the anti-P501S monoclonal antibody P501S-10E3-G4D3 (prepared as described below). Lane 1 is the biotinylated protein molecular weight marker (BioLabs).

The localization of recombinant P501S in the insect cells was investigated as follows. The insect cells overexpressing P501S were fractionated into fractions of nucleus, mitochondria, membrane and cytosol. Equal amounts of protein from each fraction were analyzed by Western blot with a monoclonal antibody against P501S. Due to the scheme of fractionation, both nucleus and mitochondria fractions contain some plasma membrane components. However, the membrane fraction is basically free from mitochondria and nucleus. P501S was found to be present in all fractions that contain the membrane component, suggesting that P501S may be associated with plasma membrane of the insect cells expressing the recombinant protein.

c) Expression of P501S in mammalian cells

Full-length P501S (553AA) was cloned into various mammalian expression vectors, including pCEP4 (Invitrogen), pVR1012 (Vical, San Diego, CA) and a modified form of the retroviral vector pBMN, referred to as pBIB. Transfection of P501S/pCEP4 and P501S/pVR1012 into HEK293 fibroblasts was carried out using the Fugene transfection reagent (Boehringer Mannheim). Briefly, 2 ul of Fugene reagent was diluted into 100 ul of serum-free media and incubated at room temperature for 5-10 min. This mixture was added to 1 ug of P501S plasmid DNA, mixed briefly and incubated for 30 minutes at room temperature. The Fugene/DNA mixture

was added to cells and incubated for 24-48 hours. Expression of recombinant P501S in transfected HEK293 fibroblasts was detected by means of Western blot employing a monoclonal antibody to P501S.

Transfection of p501S/pCEP4 into CHO-K cells (American Type Culture Collection, Rockville, MD) was carried out using GenePorter transfection reagent (Gene Therapy Systems, San Diego, CA). Briefly, 15 μ l of GenePorter was diluted in 500 μ l of serum-free media and incubated at room temperature for 10 min. The GenePorter/media mixture was added to 2 μ g of plasmid DNA that was diluted in 500 μ l of serum-free media, mixed briefly and incubated for 30 min at room temperature. CHO-K cells were rinsed in PBS to remove serum proteins, and the GenePorter/DNA mix was added and incubated for 5 hours. The transfected cells were then fed an equal volume of 2x media and incubated for 24-48 hours.

FACS analysis of P501S transiently infected CHO-K cells, demonstrated surface expression of P501S. Expression was detected using rabbit polyclonal antisera raised against a P501S peptide, as described below. Flow cytometric analysis was performed using a FaCScan (Becton Dickinson), and the data were analyzed using the Cell Quest program.

EXAMPLE 18

PREPARATION AND CHARACTERIZATION OF ANTIBODIES AGAINST PROSTATE-SPECIFIC POLYPEPTIDES

a) Preparation and Characterization of Antibodies against P501S

A murine monoclonal antibody directed against the carboxy-terminus of the prostate-specific antigen P501S was prepared as follows.

A truncated fragment of P501S (amino acids 355-526 of SEQ ID NO: 113) was generated and cloned into the pET28b vector (Novagen) and expressed in *E. coli* as a thioredoxin fusion protein with a histidine tag. The trx-P501S fusion protein was purified by nickel chromatography, digested with thrombin to remove the trx fragment and further purified by an acid precipitation procedure followed by reverse phase HPLC.

Mice were immunized with truncated P501S protein. Serum bleeds from mice that potentially contained anti-P501S polyclonal sera were tested for P501S-specific reactivity using ELISA assays with purified P501S and trx-P501S proteins. Serum bleeds that appeared to react specifically with P501S were then screened for P501S reactivity by Western analysis. Mice that contained a P501S-specific antibody component were sacrificed and spleen cells were used to

generate anti-P501S antibody producing hybridomas using standard techniques. Hybridoma supernatants were tested for P501S-specific reactivity initially by ELISA, and subsequently by FACS analysis of reactivity with P501S transduced cells. Based on these results, a monoclonal hybridoma referred to as 10E3 was chosen for further subcloning. A number of subclones were generated, tested for specific reactivity to P501S using ELISA and typed for IgG isotype. The results of this analysis are shown below in Table V. Of the 16 subclones tested, the monoclonal antibody 10E3-G4-D3 was selected for further study.

Table V

Isotype analysis of murine anti-P501S monoclonal antibodies

Hybridoma clone	Isotype	Estimated [Ig] in supernatant (µg/ml)
4D11	IgG1	14.6
1G1	IgG1	0.6
4F6	IgG1	72
4H5	IgG1	13.8
4H5-E12	IgG1	10.7
4H5-EH2	IgG1	9.2
4H5-H2-A10	IgG1	10
4H5-H2-A3	IgG1	12.8
4H5-H2-A10-G6	IgG1	13.6
4H5-H2-B11	IgG1	12.3
10E3	IgG2a	3.4
10E3-D4	IgG2a	3.8
10E3-D4-G3	IgG2a	9.5
10E3-D4-G6	IgG2a	10.4
10E3-E7	IgG2a	6.5
8H12	IgG2a	0.6

The specificity of 10E3-G4-D3 for P501S was examined by FACS analysis.

Specifically, cells were fixed (2% formaldehyde, 10 minutes), permeabilized (0.1% saponin, 10 minutes) and stained with 10E3-G4-D3 at 0.5 – 1 µg/ml, followed by incubation with a secondary, FITC-conjugated goat anti-mouse Ig antibody (Pharmingen, San Diego, CA). Cells were then analyzed for FITC fluorescence using an Excalibur fluorescence activated cell sorter. For FACS analysis of transduced cells, B-LCL were retrovirally transduced with P501S. For analysis of infected cells, B-LCL were infected with a vaccinia vector that expresses P501S. To demonstrate

specificity in these assays, B-LCL transduced with a different antigen (P703P) and uninfected B-LCL vectors were utilized. 10E3-G4-D3 was shown to bind with P501S-transduced B-LCL and also with P501S-infected B-LCL, but not with either uninfected cells or P703P-transduced cells.

To determine whether the epitope recognized by 10E3-G4-D3 was found on the surface or in an intracellular compartment of cells, B-LCL were transduced with P501S or HLA-B8 as a control antigen and either fixed and permeabilized as described above or directly stained with 10E3-G4-D3 and analyzed as above. Specific recognition of P501S by 10E3-G4-D3 was found to require permeabilization, suggesting that the epitope recognized by this antibody is intracellular.

The reactivity of 10E3-G4-D3 with the three prostate tumor cell lines Lncap, PC-3 and DU-145, which are known to express high, medium and very low levels of P501S, respectively, was examined by permeabilizing the cells and treating them as described above. Higher reactivity of 10E3-G4-D3 was seen with Lncap than with PC-3, which in turn showed higher reactivity than DU-145. These results are in agreement with the real time PCR and demonstrate that the antibody specifically recognizes P501S in these tumor cell lines and that the epitope recognized in prostate tumor cell lines is also intracellular.

Specificity of 10E3-G4-D3 for P501S was also demonstrated by Western blot analysis. Lysates from the prostate tumor cell lines Lncap, DU-145 and PC-3, from P501S-transiently transfected HEK293 cells, and from non-transfected HEK293 cells were generated. Western blot analysis of these lysates with 10E3-G4-D3 revealed a 46 kDa immunoreactive band in Lncap, PC-3 and P501S-transfected HEK cells, but not in DU-145 cells or non-transfected HEK293 cells. P501S mRNA expression is consistent with these results since semi-quantitative PCR analysis revealed that P501S mRNA is expressed in Lncap, to a lesser but detectable level in PC-3 and not at all in DU-145 cells. Bacterially expressed and purified recombinant P501S (referred to as P501SStr2) was recognized by 10E3-G4-D3 (24 kDa), as was full-length P501S that was transiently expressed in HEK293 cells using either the expression vector VR1012 or pCEP4. Although the predicted molecular weight of P501S is 60.5 kDa, both transfected and "native" P501S run at a slightly lower mobility due to its hydrophobic nature.

Immunohistochemical analysis was performed on prostate tumor and a panel of normal tissue sections (prostate, adrenal, breast, cervix, colon, duodenum, gall bladder, ileum, kidney, ovary, pancreas, parotid gland, skeletal muscle, spleen and testis). Tissue samples were fixed in formalin solution for 24 hours and embedded in paraffin before being sliced into 10 micron sections. Tissue sections were permeabilized and incubated with 10E3-G4-D3 antibody for 1 hr.

HRP-labeled anti-mouse followed by incubation with DAB chromogen was used to visualize P501S immunoreactivity. P501S was found to be highly expressed in both normal prostate and prostate tumor tissue but was not detected in any of the other tissues tested.

To identify the epitope recognized by 10E3-G4-D3, an epitope mapping approach was pursued. A series of 13 overlapping 20-21 mers (5 amino acid overlap; SEQ ID NO: 489-501) was synthesized that spanned the fragment of P501S used to generate 10E3-G4-D3. Flat bottom 96 well microtiter plates were coated with either the peptides or the P501S fragment used to immunize mice, at 1 microgram/ml for 2 hours at 37 °C. Wells were then aspirated and blocked with phosphate buffered saline containing 1% (w/v) BSA for 2 hours at room temperature, and subsequently washed in PBS containing 0.1% Tween 20 (PBST). Purified antibody 10E3-G4-D3 was added at 2 fold dilutions (1000 ng – 16 ng) in PBST and incubated for 30 minutes at room temperature. This was followed by washing 6 times with PBST and subsequently incubating with HRP-conjugated donkey anti-mouse IgG (H+L)Affinipure F(ab') fragment (Jackson Immunoresearch, West Grove, PA) at 1:20000 for 30 minutes. Plates were then washed and incubated for 15 minutes in tetramethyl benzidine. Reactions were stopped by the addition of 1N sulfuric acid and plates were read at 450 nm using an ELISA plate reader. As shown in Fig. 8, reactivity was seen with the peptide of SEQ ID NO: 496 (corresponding to amino acids 439-459 of P501S) and with the P501S fragment but not with the remaining peptides, demonstrating that the epitope recognized by 10E3-G4-D3 is localized to amino acids 439-459 of SEQ ID NO: 113.

In order to further evaluate the tissue specificity of P501S, multi-array immunohistochemical analysis was performed on approximately 4700 different human tissues encompassing all the major normal organs as well as neoplasias derived from these tissues. Sixty-five of these human tissue samples were of prostate origin. Tissue sections 0.6 mm in diameter were formalin-fixed and paraffin embedded. Samples were pretreated with HIER using 10 mM citrate buffer pH 6.0 and boiling for 10 min. Sections were stained with 10E3-G4-D3 and P501S immunoreactivity was visualized with HRP. All the 65 prostate tissues samples (5 normal, 55 untreated prostate tumors, 5 hormone refractory prostate tumors) were positive, showing distinct perinuclear staining. All other tissues examined were negative for P501S expression.

b) Preparation and Characterization of Antibodies against P503S

A fragment of P503S (amino acids 113-241 of SEQ ID NO: 114) was expressed and purified from bacteria essentially as described above for P501S and used to immunize both rabbits

and mice. Mouse monoclonal antibodies were isolated using standard hybridoma technology as described above. Rabbit monoclonal antibodies were isolated using Selected Lymphocyte Antibody Method (SLAM) technology at Immgenics Pharmaceuticals (Vancouver, BC, Canada). Table VI, below, lists the monoclonal antibodies that were developed against P503S.

5

Table VI

Antibody	Species
20D4	Rabbit
JA1	Rabbit
1A4	Mouse
1C3	Mouse
1C9	Mouse
1D12	Mouse
2A11	Mouse
2H9	Mouse
4H7	Mouse
8A8	Mouse
8D10	Mouse
9C12	Mouse
6D12	Mouse

The DNA sequences encoding the complementarity determining regions (CDRs) for the rabbit monoclonal antibodies 20D4 and JA1 were determined and are provided in SEQ ID NO: 502 and 503, respectively.

In order to better define the epitope binding region of each of the antibodies, a series of overlapping peptides were generated that span amino acids 109-213 of SEQ ID NO: 114. These peptides were used to epitope map the anti-P503S monoclonal antibodies by ELISA as follows.

The recombinant fragment of P503S that was employed as the immunogen was used as a positive control. Ninety-six well microtiter plates were coated with either peptide or recombinant antigen at 20 ng/well overnight at 4 °C. Plates were aspirated and blocked with phosphate buffered saline containing 1% (w/v) BSA for 2 hours at room temperature then washed in PBS containing 0.1% Tween 20 (PBST). Purified rabbit monoclonal antibodies diluted in PBST were added to the wells and incubated for 30 min at room temperature. This was followed by washing 6 times with PBST and incubation with Protein-A HRP conjugate at a 1:2000 dilution for a further 30 min. Plates were washed six times in PBST and incubated with tetramethylbenzidine (TMB) substrate for a further

15 min. The reaction was stopped by the addition of 1N sulfuric acid and plates were read at 450 nm using at ELISA plate reader. ELISA with the mouse monoclonal antibodies was performed with supernatants from tissue culture run neat in the assay.

All of the antibodies bound to the recombinant P503S fragment, with the exception
5 of the negative control SP2 supernatant. 20D4, JA1 and 1D12 bound strictly to peptide #2101 (SEQ ID NO: 504), which corresponds to amino acids 151-169 of SEQ ID NO: 114. 1C3 bound to peptide #2102 (SEQ ID NO: 505), which corresponds to amino acids 165-184 of SEQ ID NO: 114. 9C12 bound to peptide #2099 (SEQ ID NO: 522), which corresponds to amino acids 120-139 of SEQ ID NO: 114. The other antibodies bind to regions that were not examined in these studies.

10 Subsequent to epitope mapping, the antibodies were tested by FACS analysis on a cell line that stably expressed P503S to confirm that the antibodies bind to cell surface epitopes. Cells stably transfected with a control plasmid were employed as a negative control. Cells were stained live with no fixative. 0.5 ug of anti-P503S monoclonal antibody was added and cells were incubated on ice for 30 min before being washed twice and incubated with a FITC-labelled goat
15 anti-rabbit or mouse secondary antibody for 20 min. After being washed twice, cells were analyzed with an Excalibur fluorescent activated cell sorter. The monoclonal antibodies 1C3, 1D12, 9C12, 20D4 and JA1, but not 8D3, were found to bind to a cell surface epitope of P503S.

In order to determine which tissues express P503S, immunohistochemical analysis was performed, essentially as described above, on a panel of normal tissues (prostate, adrenal,
20 breast, cervix, colon, duodenum, gall bladder, ileum, kidney, ovary, pancreas, parotid gland, skeletal muscle, spleen and testis). HRP-labeled anti-mouse or anti-rabbit antibody followed by incubation with TMB was used to visualize P503S immunoreactivity. P503S was found to be highly expressed in prostate tissue, with lower levels of expression being observed in cervix, colon, ileum and kidney, and no expression being observed in adrenal, breast, duodenum, gall bladder, ovary,
25 pancreas, parotid gland, skeletal muscle, spleen and testis.

Western blot analysis was used to characterize anti-P503S monoclonal antibody specificity. SDS-PAGE was performed on recombinant (rec) P503S expressed in and purified from bacteria and on lysates from HEK293 cells transfected with full length P503S. Protein was transferred to nitrocellulose and then Western blotted with each of the anti-P503S monoclonal
30 antibodies (20D4, JA1, 1D12, 6D12 and 9C12) at an antibody concentration of 1 ug/ml. Protein was detected using horse radish peroxidase (HRP) conjugated to either a goat anti-mouse monoclonal antibody or to protein A-sepharose. The monoclonal antibody 20D4 detected the

appropriate molecular weight 14 kDa recombinant P503S (amino acids 113-241) and the 23.5 kDa species in the HEK293 cell lysates transfected with full length P503S. Other anti-P503S monoclonal antibodies displayed similar specificity by Western blot.

5 **c) Preparation and Characterization of Antibodies against P703P**

Rabbits were immunized with either a truncated (P703Ptrl; SEQ ID NO: 172) or full-length mature form (P703Pfl; SEQ ID NO: 523) of recombinant P703P protein was expressed in and purified from bacteria as described above. Affinity purified polyclonal antibody was generated using immunogen P703Pfl or P703Ptrl attached to a solid support. Rabbit monoclonal
10 antibodies were isolated using SLAM technology at Immgenics Pharmaceuticals. Table VII below lists both the polyclonal and monoclonal antibodies that were generated against P703P.

Table VII

Antibody	Immunogen	Species/type
Aff. Purif. P703P (truncated); #2594	P703Ptrl	Rabbit polyclonal
Aff. Purif. P703P (full length); #9245	P703Pfl	Rabbit polyclonal
2D4	P703Ptrl	Rabbit monoclonal
8H2	P703Ptrl	Rabbit monoclonal
7H8	P703Ptrl	Rabbit monoclonal

15

The DNA sequences encoding the complementarity determining regions (CDRs) for the rabbit monoclonal antibodies 8H2, 7H8 and 2D4 were determined and are provided in SEQ ID NO: 506-508, respectively.

Epitope mapping studies were performed as described above. Monoclonal
20 antibodies 2D4 and 7H8 were found to specifically bind to the peptides of SEQ ID NO: 509 (corresponding to amino acids 145-159 of SEQ ID NO: 172) and SEQ ID NO: 510 (corresponding to amino acids 11-25 of SEQ ID NO: 172), respectively. The polyclonal antibody 2594 was found to bind to the peptides of SEQ ID NO: 511-514, with the polyclonal antibody 9427 binding to the peptides of SEQ ID NO: 515-517.

25 The specificity of the anti-P703P antibodies was determined by Western blot analysis as follows. SDS-PAGE was performed on (1) bacterially expressed recombinant antigen; (2) lysates of HEK293 cells and Ltk^{-/-} cells either untransfected or transfected with a plasmid

expressing full length P703P; and (3) supernatant isolated from these cell cultures. Protein was transferred to nitrocellulose and then Western blotted using the anti-P703P polyclonal antibody #2594 at an antibody concentration of 1 ug/ml. Protein was detected using horse radish peroxidase (HRP) conjugated to an anti-rabbit antibody. A 35 kDa immunoreactive band could be observed with recombinant P703P. Recombinant P703P runs at a slightly higher molecular weight since it is epitope tagged. In lysates and supernatants from cells transfected with full length P703P, a 30 kDa band corresponding to P703P was observed. To assure specificity, lysates from HEK293 cells stably transfected with a control plasmid were also tested and were negative for P703P expression. Other anti-P703P antibodies showed similar results.

Immunohistochemical studies were performed as described above, using anti-P703P monoclonal antibody. P703P was found to be expressed at high levels in normal prostate and prostate tumor tissue but was not detectable in all other tissues tested (breast tumor, lung tumor and normal kidney).

EXAMPLE 19

CHARACTERIZATION OF CELL SURFACE EXPRESSION AND CHROMOSOME LOCALIZATION OF THE PROSTATE-SPECIFIC ANTIGEN P501S

This example describes studies demonstrating that the prostate-specific antigen P501S is expressed on the surface of cells, together with studies to determine the probable chromosomal location of P501S.

The protein P501S (SEQ ID NO: 113) is predicted to have 11 transmembrane domains. Based on the discovery that the epitope recognized by the anti-P501S monoclonal antibody 10E3-G4-D3 (described above in Example 17) is intracellular, it was predicted that following transmembrane determinants would allow the prediction of extracellular domains of P501S. Fig. 9 is a schematic representation of the P501S protein showing the predicted location of the transmembrane domains and the intracellular epitope described in Example 17. Underlined sequence represents the predicted transmembrane domains, bold sequence represents the predicted extracellular domains, and italicized sequence represents the predicted intracellular domains. Sequence that is both bold and underlined represents sequence employed to generate polyclonal rabbit serum. The location of the transmembrane domains was predicted using HHMTOP as

described by Tusnady and Simon (Principles Governing Amino Acid Composition of Integral Membrane Proteins: Applications to Topology Prediction, *J. Mol. Biol.* 283:489-506, 1998).

Based on Fig. 9, the P501S domain flanked by the transmembrane domains corresponding to amino acids 274-295 and 323-342 is predicted to be extracellular. The peptide of SEQ ID NO: 518 corresponds to amino acids 306-320 of P501S and lies in the predicted extracellular domain. The peptide of SEQ ID NO: 519, which is identical to the peptide of SEQ ID NO: 518 with the exception of the substitution of the histidine with an asparagine, was synthesized as described above. A Cys-Gly was added to the C-terminus of the peptide to facilitate conjugation to the carrier protein. Cleavage of the peptide from the solid support was carried out using the following cleavage mixture: trifluoroacetic acid:ethanediol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for two hours, the peptide was precipitated in cold ether. The peptide pellet was then dissolved in 10% v/v acetic acid and lyophilized prior to purification by C18 reverse phase hplc. A gradient of 5-60% acetonitrile (containing 0.05% TFA) in water (containing 0.05% TFA) was used to elute the peptide. The purity of the peptide was verified by hplc and mass spectrometry, and was determined to be >95%. The purified peptide was used to generate rabbit polyclonal antisera as described above.

Surface expression of P501S was examined by FACS analysis. Cells were stained with the polyclonal anti-P501S peptide serum at 10 µg/ml, washed, incubated with a secondary FITC-conjugated goat anti-rabbit Ig antibody (ICN), washed and analyzed for FITC fluorescence using an Excalibur fluorescence activated cell sorter. For FACS analysis of transduced cells, B-LCL were retrovirally transduced with P501S. To demonstrate specificity in these assays, B-LCL transduced with an irrelevant antigen (P703P) or nontransduced were stained in parallel. For FACS analysis of prostate tumor cell lines, Lncap, PC-3 and DU-145 were utilized. Prostate tumor cell lines were dissociated from tissue culture plates using cell dissociation medium and stained as above. All samples were treated with propidium iodide (PI) prior to FACS analysis, and data was obtained from PI-excluding (i.e. intact and non-permeabilized) cells. The rabbit polyclonal serum generated against the peptide of SEQ ID NO: 519 was shown to specifically recognize the surface of cells transduced to express P501S, demonstrating that the epitope recognized by the polyclonal serum is extracellular.

To determine biochemically if P501S is expressed on the cell surface, peripheral membranes from Lncap cells were isolated and subjected to Western blot analysis. Specifically, Lncap cells were lysed using a dounce homogenizer in 5 ml of homogenization buffer (250 mM

sucrose, 10 mM HEPES, 1mM EDTA, pH 8.0, 1 complete protease inhibitor tablet (Boehringer Mannheim)). Lysate samples were spun at 1000 g for 5 min at 4 °C. The supernatant was then spun at 8000g for 10 min at 4 °C. Supernatant from the 8000g spin was recovered and subjected to a 100,000g spin for 30 min at 4 °C to recover peripheral membrane. Samples were then separated by SDS-PAGE and Western blotted with the mouse monoclonal antibody 10E3-G4-D3 (described above in Example 17) using conditions described above. Recombinant purified P501S, as well as HEK293 cells transfected with and over-expressing P501S were included as positive controls for P501S detection. LCL cell lysate was included as a negative control. P501S could be detected in Lncap total cell lysate, the 8000g (internal membrane) fraction and also in the 100,000g (plasma membrane) fraction. These results indicate that P501S is expressed at, and localizes to, the peripheral membrane.

To demonstrate that the rabbit polyclonal antiserum generated to the peptide of SEQ ID NO: 519 specifically recognizes this peptide as well as the corresponding native peptide of SEQ ID NO: 518, ELISA analyses were performed. For these analyses, flat-bottomed 96 well microtiter plates were coated with either the peptide of SEQ ID NO: 519, the longer peptide of SEQ ID NO: 520 that spans the entire predicted extracellular domain, the peptide of SEQ ID NO: 521 which represents the epitope recognized by the P501S-specific antibody 10E3-G4-D3, or a P501S fragment (corresponding to amino acids 355-526 of SEQ ID NO: 113) that does not include the immunizing peptide sequence, at 1 µg/ml for 2 hours at 37 °C. Wells were aspirated, blocked with phosphate buffered saline containing 1% (w/v) BSA for 2 hours at room temperature and subsequently washed in PBS containing 0.1% Tween 20 (PBST). Purified anti-P501S polyclonal rabbit serum was added at 2 fold dilutions (1000 ng - 125 ng) in PBST and incubated for 30 min at room temperature. This was followed by washing 6 times with PBST and incubating with HRP-conjugated goat anti-rabbit IgG (H+L) Affinipure F(ab') fragment at 1:20000 for 30 min. Plates were then washed and incubated for 15 min in tetramethyl benzidine. Reactions were stopped by the addition of 1N sulfuric acid and plates were read at 450 nm using an ELISA plate reader. As shown in Fig. 11, the anti-P501S polyclonal rabbit serum specifically recognized the peptide of SEQ ID NO: 519 used in the immunization as well as the longer peptide of SEQ ID NO: 520, but did not recognize the irrelevant P501S-derived peptides and fragments.

In further studies, rabbits were immunized with peptides derived from the P501S sequence and predicted to be either extracellular or intracellular, as shown in Fig. 9. Polyclonal rabbit sera were isolated and polyclonal antibodies in the serum were purified, as described above.

To determine specific reactivity with P501S, FACS analysis was employed, utilizing either B-LCL transduced with P501S or the irrelevant antigen P703P, of B-LCL infected with vaccinia virus-expressing P501S. For surface expression, dead and non-intact cells were excluded from the analysis as described above. For intracellular staining, cells were fixed and permeabilized as described above. Rabbit polyclonal serum generated against the peptide of SEQ ID NO: 548, which corresponds to amino acids 181-198 of P501S, was found to recognize a surface epitope of P501S. Rabbit polyclonal serum generated against the peptide SEQ ID NO: 551, which corresponds to amino acids 543-553 of P501S, was found to recognize an epitope that was either potentially extracellular or intracellular since in different experiments intact or permeabilized cells were recognized by the polyclonal sera. Based on similar deductive reasoning, the sequences of SEQ ID NO: 541-547, 549 and 550, which correspond to amino acids 109-122, 539-553, 509-520, 37-54, 342-359, 295-323, 217-274, 143-160 and 75-88, respectively, of P501S, can be considered to be potential surface epitopes of P501S recognized by antibodies.

The chromosomal location of P501S was determined using the GeneBridge 4 Radiation Hybrid panel (Research Genetics). The PCR primers of SEQ ID NO: 528 and 529 were employed in PCR with DNA pools from the hybrid panel according to the manufacturer's directions. After 38 cycles of amplification, the reaction products were separated on a 1.2% agarose gel, and the results were analyzed through the Whitehead Institute/MIT Center for Genome Research web server (<http://www-genome.wi.mit.edu/cgi-bin/contig/rhmapper.pl>) to determine the probable chromosomal location. Using this approach, P501S was mapped to the long arm of chromosome 1 at WI-9641 between q32 and q42. This region of chromosome 1 has been linked to prostate cancer susceptibility in hereditary prostate cancer (Smith *et al. Science* 274:1371-1374, 1996 and Berthon *et al. Am. J. Hum. Genet.* 62:1416-1424, 1998). These results suggest that P501S may play a role in prostate cancer malignancy.

From the foregoing, it will be appreciated that, although specific embodiments of the invention have been described herein for the purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the present invention is not limited except as by the appended claims.

CLAIMS

1. An isolated polypeptide comprising at least an immunogenic portion of a prostate-specific protein, or a variant thereof, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (a) sequences recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536;
- (b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and
- (c) complements of any of the sequence of (a) or (b).

2. An isolated polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID No: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotide sequences.

3. An isolated polypeptide comprising a sequence recited in any one of SEQ ID NO: 108, 112, 113, 114, 172, 176, 178, 327, 329, 331, 339, 383, 477-483, 496, 504, 505, 519, 520, 522, 525, 527, 532, 534 and 537-550.

4. An isolated polynucleotide encoding at least 15 contiguous amino acid residues of a prostate-specific protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the protein
5 comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413,
10 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing sequences.

5. An isolated polynucleotide encoding a prostate-specific protein, or a
15 variant thereof, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396,
20 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing sequences.

6. An isolated polynucleotide comprising a sequence recited in any one
25 of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530,
30 531, 533, 535 and 536.

7. An isolated polynucleotide comprising a sequence that hybridizes under moderately stringent conditions to a sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536.

8. An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

9. An expression vector comprising a polynucleotide according to any one of claims 4-8.

10. A host cell transformed or transfected with an expression vector according to claim 9.

11. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a prostate-specific protein, the protein comprising an amino acid sequence encoded by a polynucleotide sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471, 472-476, 524, 526, 530, 531, 533, 535 and 536 or a complement of any of the foregoing polynucleotide sequences.

12. A monoclonal antibody that specifically binds to an amino acid sequence selected from the group consisting of SEQ ID NO: 496, 504, 505, 509-517, 519, 520, 522 and 539-551.

5 13. A monoclonal antibody comprising a complementarity determining region selected from the group consisting of SEQ ID NO: 502, 503 and 506-508.

10 14. A fusion protein comprising at least one polypeptide according to claim 1.

15 15. A fusion protein according to claim 14, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.

16 16. A fusion protein according to claim 14, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of claim 1.

20 17. A fusion protein according to claim 14, wherein the fusion protein comprises an affinity tag.

18. An isolated polynucleotide encoding a fusion protein according to claim 14.

25 19.. A pharmaceutical composition comprising a physiologically acceptable carrier and at least one component selected from the group consisting of:

- (a) a polypeptide according to claim 1;
- (b) a polynucleotide according to claim 4;
- (c) an antibody according to any one of claims 11-13;
- 30 (d) a fusion protein according to claim 14; and

(e) a polynucleotide according to claim 18.

20. A vaccine comprising an immunostimulant and at least one component selected from the group consisting of:

- 5 (a) a polypeptide according to claim 1;
(b) a polynucleotide according to claim 4;
(c) an antibody according to any one of claims 11-13;
(d) a fusion protein according to claim 14; and
(e) a polynucleotide according to claim 18.

10

21. A vaccine according to claim 20, wherein the immunostimulant is an adjuvant.

22. A vaccine according to claim 20, wherein the immunostimulant
15 induces a predominantly Type I response.

23. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 19.

20

24. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 20.

25. A pharmaceutical composition comprising an antigen-presenting cell
25 that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.

26. A pharmaceutical composition according to claim 25, wherein the antigen presenting cell is a dendritic cell or a macrophage.

27. A vaccine comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with an immunostimulant.

5 28. A vaccine according to claim 27, wherein the immunostimulant is an adjuvant.

29. A vaccine according to claim 27, wherein the immunostimulant induces a predominantly Type I response.

10

30. A vaccine according to claim 27, wherein the antigen-presenting cell is a dendritic cell.

31. A method for inhibiting the development of a cancer in a patient,
15 comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide encoded by a polynucleotide recited in any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536, and thereby inhibiting the development of a cancer in the patient.

20

32. A method according to claim 31, wherein the antigen-presenting cell is a dendritic cell.

33. A method according to any one of claims 23, 24 and 31, wherein the
25 cancer is prostate cancer.

34. A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate-specific protein, wherein the protein comprises an amino acid sequence that is
30 encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536; and

(ii) complements of the foregoing polynucleotides;

5 wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the prostate-specific protein from the sample.

35. A method according to claim 34, wherein the biological sample is
10 blood or a fraction thereof.

36. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 50.

15 37. A method for stimulating and/or expanding T cells specific for a prostate-specific protein, comprising contacting T cells with at least one component selected from the group consisting of:

(i) a polypeptide according to claim 1;
20 (ii) a polypeptide encoded by a polynucleotide comprising a sequence provided in any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536;
(iii) a polynucleotide encoding a polypeptide of (i) or (ii); and
(iv) an antigen presenting cell that expresses a polypeptide of (i) or (ii),
25 under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

38. An isolated T cell population, comprising T cells prepared according to the method of claim 37.

30

39. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 38.

5 40. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:

(i) a polypeptide according to claim 1;
10 (ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536;

(iii) a polynucleotide encoding a polypeptide of (i) or (ii); or
15 (iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate; and

(b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

20

41. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:

(i) a polypeptide according to claim 1;
25 (ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536;

30 (iii) a polynucleotide encoding a polypeptide of (i) or (ii); or

(iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate;

(b) cloning at least one proliferated cell to provide cloned T cells; and

5 (c) administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

42. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

10 (a) contacting a biological sample obtained from a patient with a binding agent that binds to a prostate-specific protein, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NO: 1-111,
15 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536; and

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent; and

20 (c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

43. A method according to claim 42, wherein the binding agent is an antibody.

25

44. A method according to claim 43, wherein the antibody is a monoclonal antibody.

45. A method according to claim 42, wherein the cancer is prostate
30 cancer.

46. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

- 5 (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a prostate-specific protein, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotides;
- 10 (b) detecting in the sample an amount of polypeptide that binds to the binding agent;
- (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and
- (d) comparing the amount of polypeptide detected in step (c) to the
15 amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

47. A method according to claim 46, wherein the binding agent is an antibody.

20

48. A method according to claim 47, wherein the antibody is a monoclonal antibody.

49. A method according to claim 46, wherein the cancer is a prostate
25 cancer.

50. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

- 30 (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate-specific protein,

wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotides;

5 (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

10

51. A method according to claim 50, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

15

52. A method according to claim 50, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

53. A method for monitoring the progression of a cancer in a patient,
20 comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate-specific protein, wherein the protein comprises an amino acid sequence that is encoded by a polynucleotide sequence of any one of SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315,
25 326, 328, 330, 332-335, 340-375, 381, 382 and 384-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from
30 the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

5 54. A method according to claim 53, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

10 55. A method according to claim 53, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

 56. A diagnostic kit, comprising:
 (a) one or more antibodies according to claim 11; and
15 (b) a detection reagent comprising a reporter group.

 57. A kit according to claim 56, wherein the antibodies are immobilized on a solid support.

20 58. A kit according to claim 56, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

 59. A kit according to claim 56, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups,
25 enzymes, biotin and dye particles.

 60. An oligonucleotide comprising 10 to 40 contiguous nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a prostate-specific protein, wherein the protein comprises an amino acid sequence that is
30 encoded by a polynucleotide sequence recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45,

47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-476, 524, 526, 530, 531, 533, 535 and 536, or a complement of any of the foregoing polynucleotides.

61. A oligonucleotide according to claim 60, wherein the oligonucleotide comprises 10-40 contiguous nucleotides recited in any one of SEQ ID NO: 2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-476, 524, 526, 530, 531, 533, 535 and 536.

15

62. A diagnostic kit, comprising:

(a) an oligonucleotide according to claim 61; and

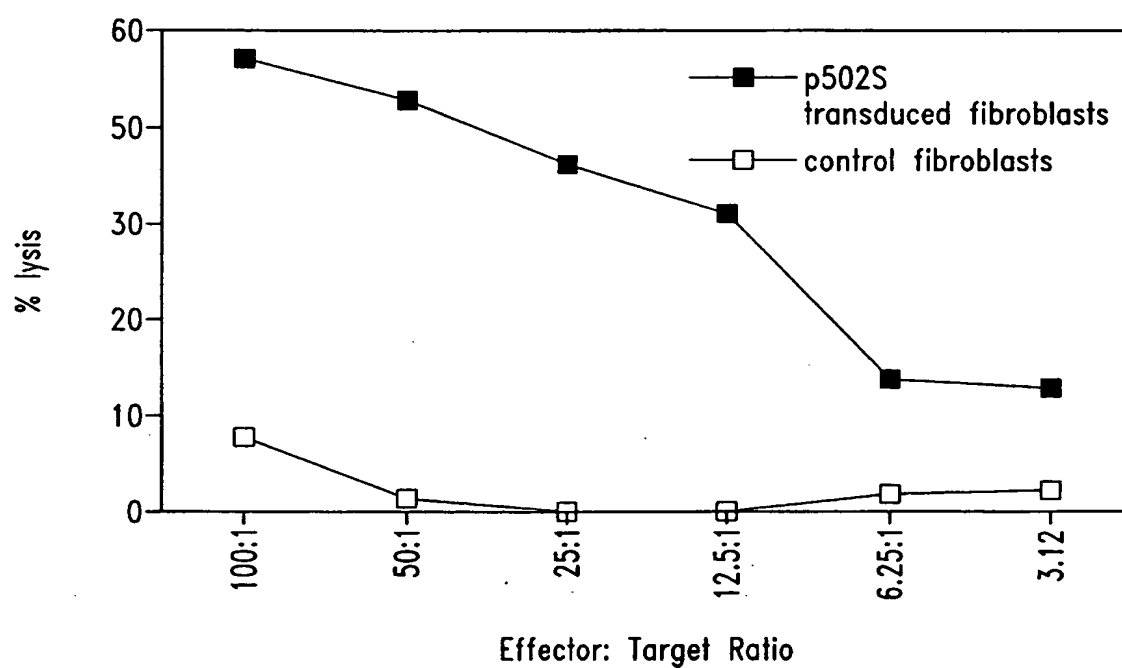
(b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

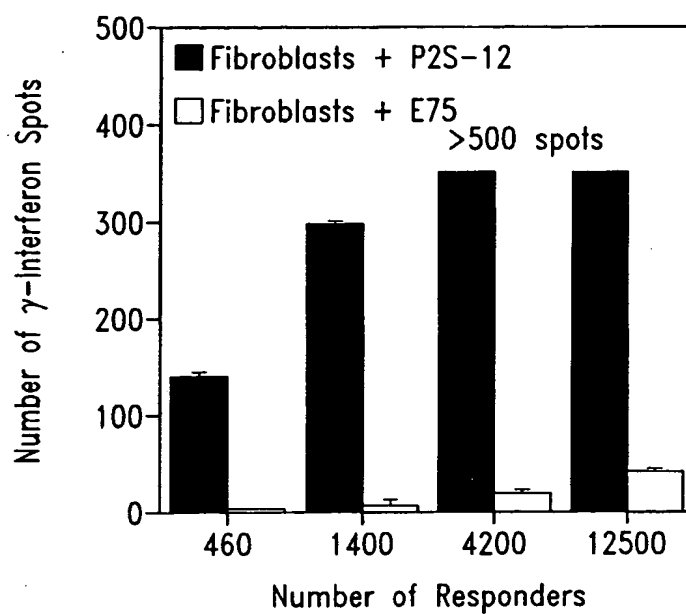
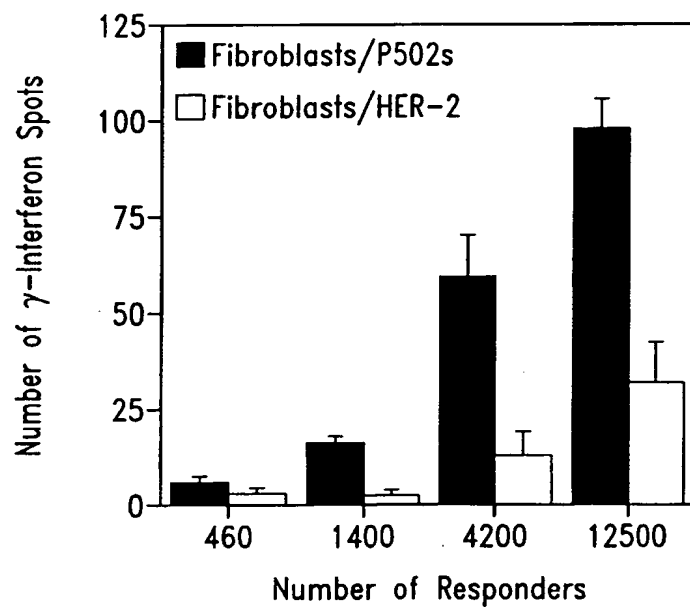
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63. A host cell according to claim 10, wherein the cell is selected from the group consisting of: *E. coli*, baculovirus and mammalian cells.

64. A recombinant protein produced by a host cell according to claim

25 10.

*Fig. 1*

*Fig. 2A**Fig. 2B*

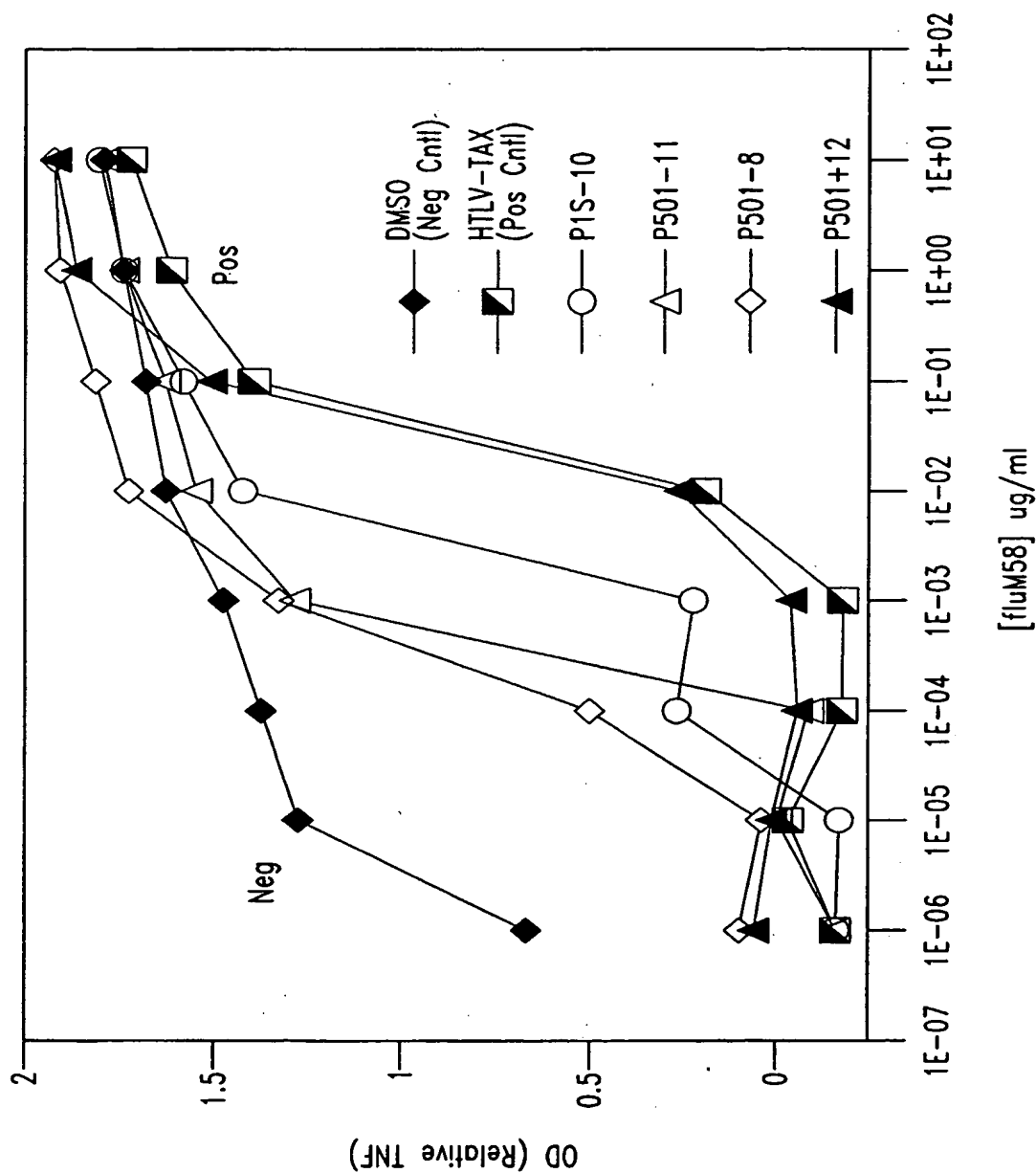
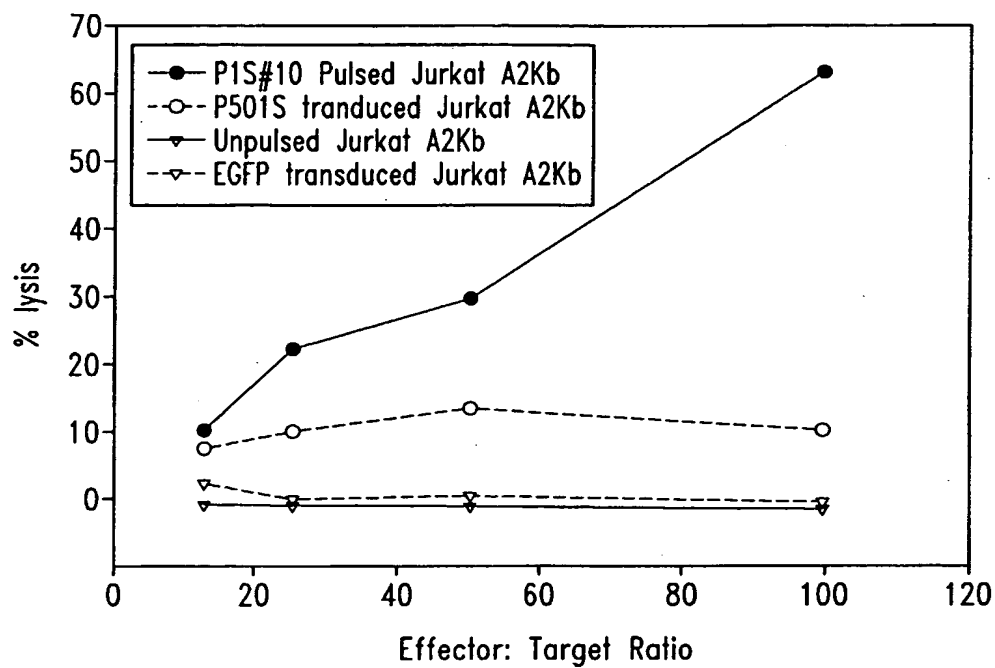
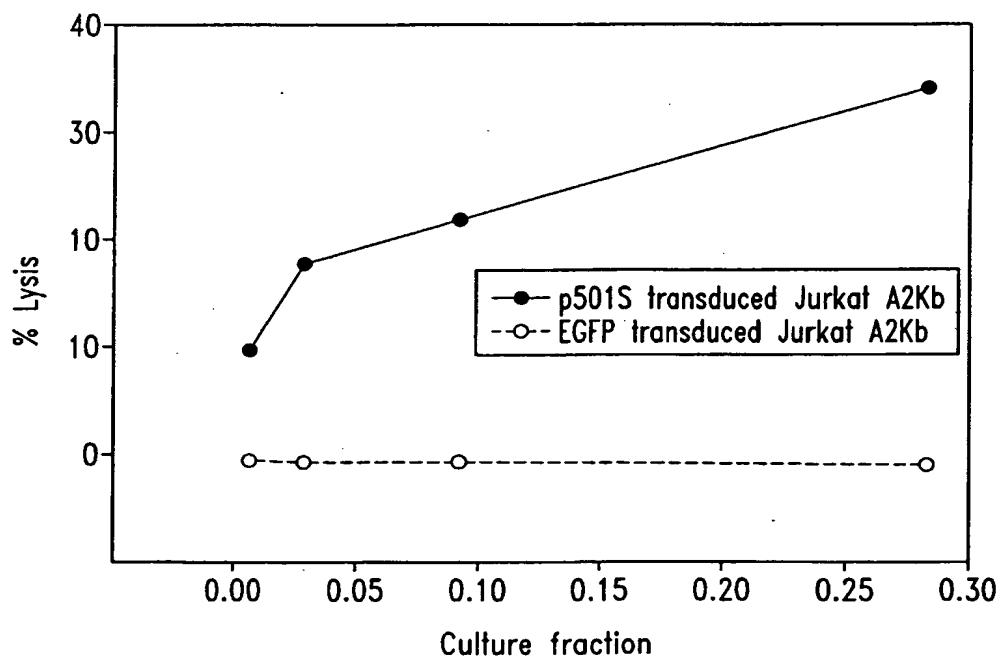
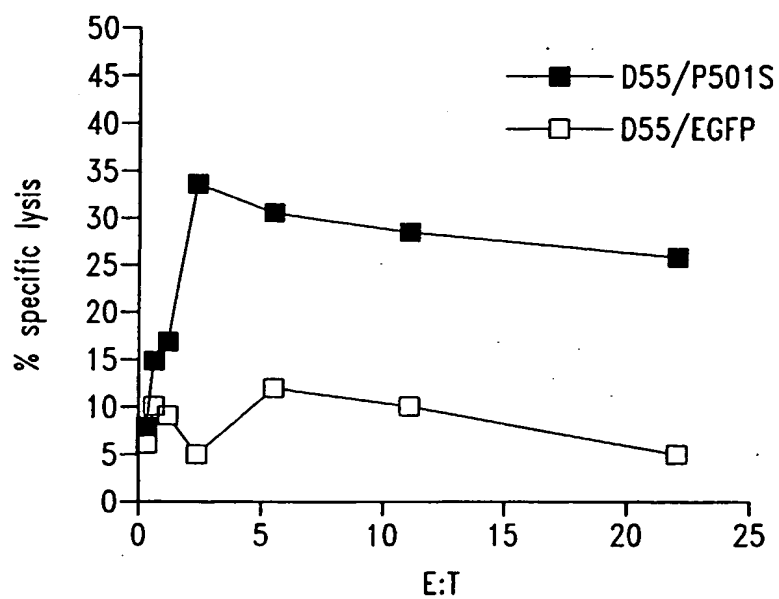
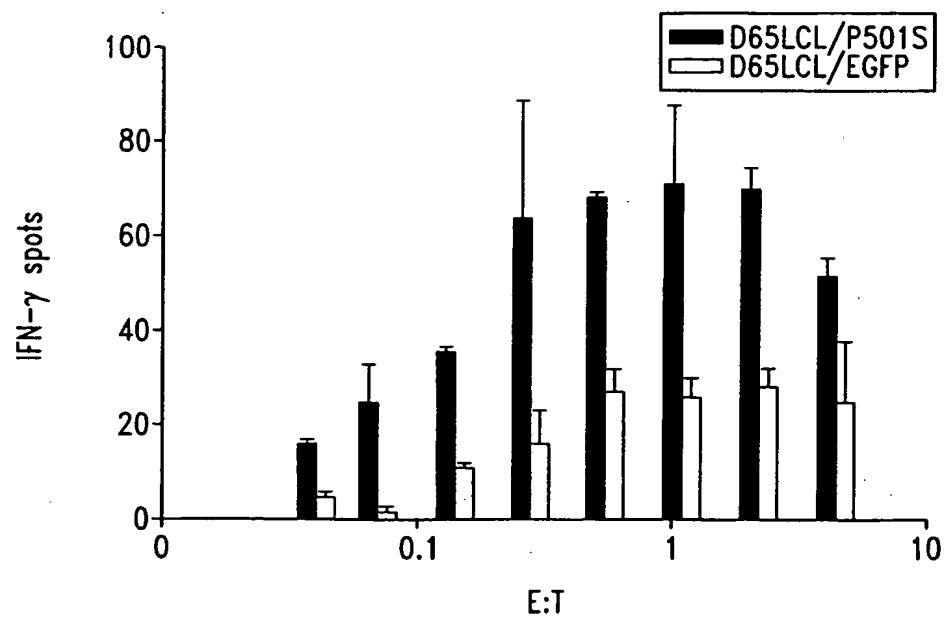
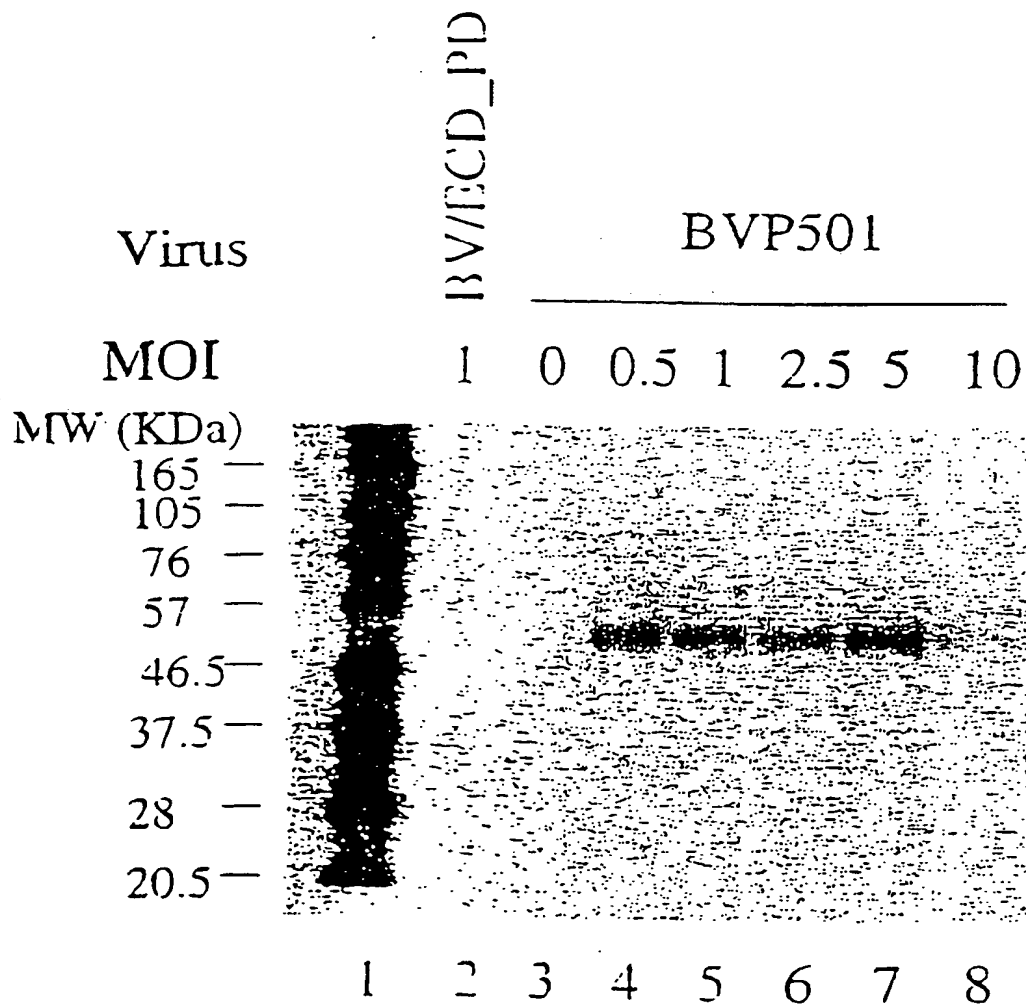


Fig. 3

*Fig. 4**Fig. 5*

*Fig. 6A**Fig. 6B*

Expression of P501S by the Baculovirus Expression System



0.6 million high 5 cells in 6-well plate were infected with an unrelated control virus BV/ECD_PD (lane 2), without virus (lane 3), or with recombinant baculovirus for P501 at different MOIs (lane 4 - 8). Cell lysates were run on SDS-PAGE under the reducing conditions and analyzed by Western blot with a monoclonal antibody against P501S (P501S-10E3-G4D3). Lane 1 is the biotinylated protein molecular weight marker (BioLabs).

Fig. 7

Fig. 8



Schematic of P501S with predicted
transmembrane, cytoplasmic, and extracellular regions

MVQRLWVSRLLRHRK AQLLLVNLLTFGLEVCLAAGIT YVPPLLLEVGVEEKFM
TMVLGIGPVLGLVCYPLLGSAS

DHWRGRYGRRRP FIWALSLGILLSLFLIPRAGWL AGLLCPDPRPLE LALLILGVGLLDFCGQVCFTPL

EALLSDLFRDPDHCRC AYSVYAFMISLGGCLGYLLPAI DWDTSALAPYLGTEEE

CLFGLLTLIFLTCVAATLLV AEAAALGPTEPAEGLSAPSLSPHCCPCRARLAFRNLGALLPRL

HQLCCRMPRTLRR LFVAELCSWMALMTFTLFYTDF VGEGLYQGVPRAEPTARRHYDEGVR

MGSLGLFLQCAISLVFSLVM DRLVQRFQTRAVYLAS VAAFPVAAGATCLSHSVAVVTA SAA

LTGFTFSALQILPYTLASLY HREKQVFLPKYRGDTGGASSED SLMTSFLPGPKPGAPFPNGHVGAGGSGL

LPPPPALCGASACDVSVRVVVGEPTEARVVPGRG ICLDLAILDSAFLLSQVAPSLF MGSIVQLSQS

VTAYMVSAAGLGLVAIYFAT QVVFDSKDLAKYSA

Underlined sequence: Predicted transmembrane domain; **Bold sequence**:
Predicted extracellular domain; *Italic sequence*: Predicted intracellular
domain. Sequence in bold/underlined: used generate polyclonal rabbit
serum

Localization of domains predicted using HMMTOP (G.E. Tusnady and I. Simon
(1998) Principles Governing Amino Acid Composition of Integral Membrane
Proteins: Applications to topology Prediction. J. Mol Biol. 283, 489-506.

Fig. 9

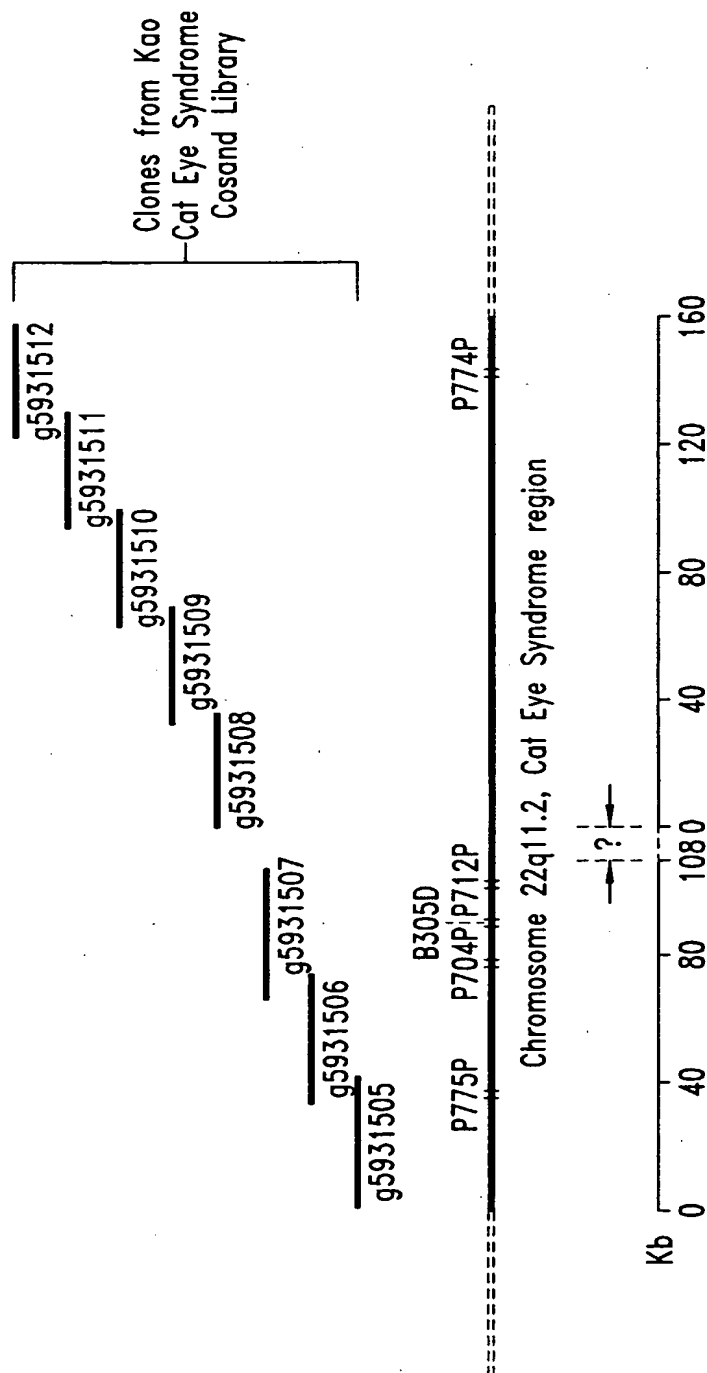


Fig. 10

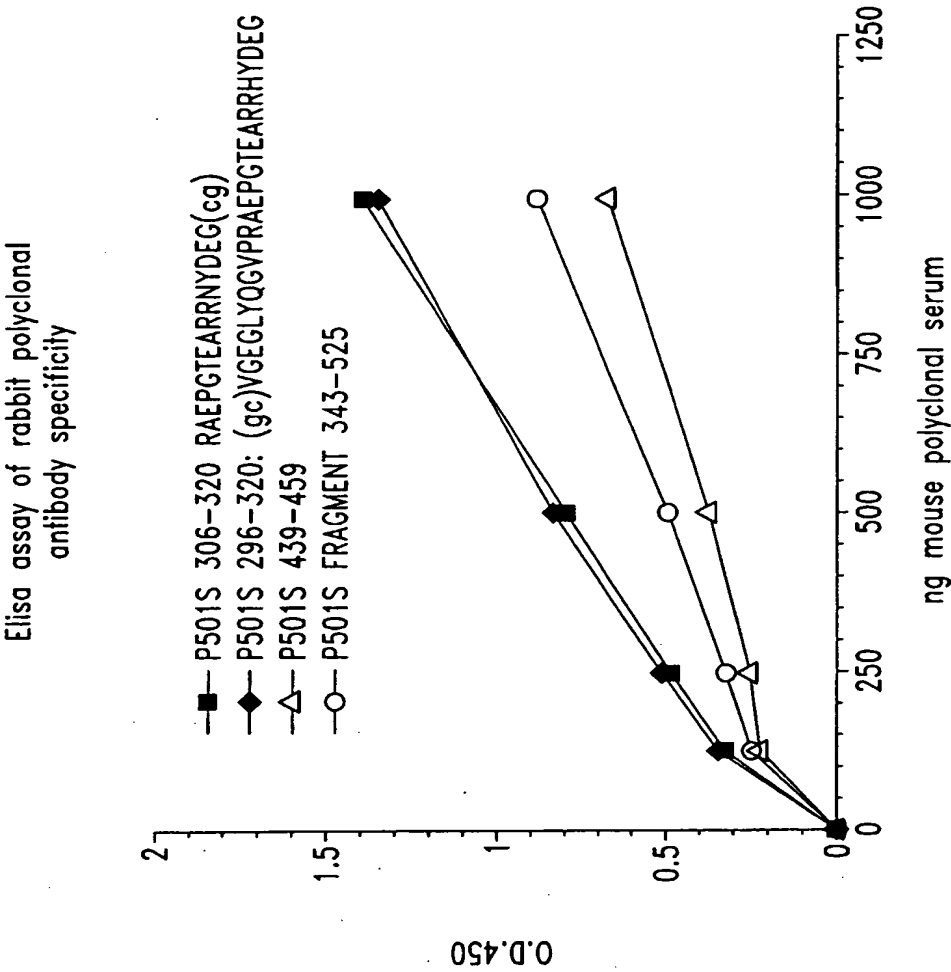


Fig. 11

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 Xu, Jiangchun
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 Harlocker, Susan Louise
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<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND
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gaagtatgta	ggaattgaag	attaatccgc	cgtagtcggg	gttctcctag	gttcaatacc	420
attggtggcc	aattgatttg	atggtaagg	gagggatcgt	tgaactcgtc	tggtatgtaa	480
aggatncctt	ngggatggga	aggcnatnaa	ggactangga	tnaatggcgg	gcangatatt	540
tcaaacngtc	tctanttctt	gaaacgtctg	aaatgttaat	aanaattaa	tttngttatt	600
gaatnttng	gaaaagggt	tacaggacta	gaaaccaa	angaaaanta	atnntaang	660
cnttatcntn	aaaggtmata	accnctccta	tnatcccacc	caatngnatt	ccccacnenn	720
acnattggat	nccccanttc	canaaanggc	cnccccccgg	tgnannccnc	cttttgttcc	780
cttnantgan	ggttattcnc	cectngcntt	atcance			817

<210> 8

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (799)

<223> n = A,T,C or G

<400> 8

catttccggg	tttactttct	aaggaaagcc	gagcggaagc	tgctaacgtg	ggaatcgggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagc	gggagagcga	ctccgagcgt	120
ctgaagcgca	cgtcccagaa	ggtggacttg	gcactgaaac	agctgggaca	catccgcgag	180
tacgaacagc	gcctgaaagt	gctggagcgg	gaggtccagc	agtgtagccg	cgtcctgggg	240
tgggtggccg	angcctganc	cgtctgcct	tgctgcccc	angtgggccc	ccacccccctg	300
acctgctgg	gtccaaacac	tgagccctgc	tggcggaact	caagganaac	ccccacangg	360
ggattttgct	cctanantaa	ggctcatctg	ggcctcggcc	ccccacacctg	gttggccttg	420
tctttgangt	gagccccatg	tccatctggg	ccactgtcng	gaccaccttt	ngggagtgtt	480
ctccttacaa	ccacannatg	cccggctcct	cccggaaacc	antcccance	tgngaaggat	540
caagnccctgn	atccactnnt	nctanaaccg	gcncncnccg	cngtggaaacc	cnccttntgt	600
tccttttctnt	tnagggttaa	tnnccgcttg	gccttnccan	ngtccctnnc	nttttccnnt	660

gttnaaattg ttangcnccc nccnntcccn cnnnnnnan cccgaccenn annttnnann	720
ncctgggggt nccnnngat tgaccenncc nccctntant tgcnttnggg nncnntgccc	780
ctttccctct nggganncg	799

<210> 9

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 9

acgccttgat cctcccaggc tgggactggg tctggggagga gccgggcatg ctgtgggttg	60
taangatgac actcccaaag gtggctctga cagtggccca gatggacatg gggctcacct	120
caaggacaag gccaccaggt gcgggggccc aagccacat gatccttact ctatgagcaa	180
aatccctgt gggggcttct ccttgaagtc cgccancagg gctcagtctt tggaccang	240
caggtcatgg ggttgtnnc caactggggg ccncaacgca aaanggcna gggcctcngn	300
cacccatccc angacgcygc tacactnctg gacctccnc tccaccactt tcatgcgtg	360
ttcntaccgg cgnatntgtc ceantgttt cngtgcenac tccancttct nggacgtg	420
ctacatacgc ccggantcnc nctcccgtt tgtccctatc cactgnccan caacaaattt	480
cncctantg caccnattcc cacntttnc agntttccnc nncgngcttc cttntaaaag	540
ggttganccc cggaatncc cccaaagggg gggggcngg tacccaactn cccctnata	600
gctgaantcc ccatnaccnn gnctcnatgg anccntcctt ttttaannacn ttctnaactt	660
gggaanance ctcgnccntn ccccnnttaa tcccncttg cnangnnct ccccnntcc	720
nccnnntng gcntntnann cnaaaaaggc cennnancaa tctcctnnc cctcanttcg	780
ccanccctcg aaatcgccn c	801

<210> 10

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(789)

<223> n = A,T,C or G

<400> 10

cagtctatnt ggccagtgtg gcagctttcc ctgtggctgc cgggtgccaca tgcctgtccc	60
acagtgtggc cgtgggtgaca gcttcagccg ccctcaccgg gttcaccttc tcagccctgc	120
agatcctgcc ctacacactg gcctccctct accaccggga gaagcaggtg ttcttgccca	180
aataccgagg ggacactgga ggtgctagca gtgaggacag cctgatgacc agcttctgc	240
caggccctaa gcctggagct cccttcccta atggacagt ggggtgctga ggcagtggcc	300
tgtcccccacc tccaccgcgc ctctgcgggg cctctgctg tgatgtctcc gtactgtgtg	360
tgggtgggtga gccaccgan gccagggtgg ttccggggcc gggcatctgc ctggacctgc	420
ccatcctgga tagtgcttcc tgctgtccca ngtggcccca tccctgttta tgggtccat	480
tgctccagtc agccagtctg tcaactgccta tatgggtgtc gccgcaggcc tgggtctggt	540
cccatttact ttgtacaca ggtantattt gacaagaacg anttggccaa atactcagcg	600
ttaaaaaatt ccagcaacat tgggggtgga aggcctgcct cactgggtcc aactccccgc	660
tctgtttaac cccatggggc tgccggcttg gccgccaatt tctgttctgc ccaaanat	720
gtggctctct gctgccacct gttgctggct gaagtgcnta cngcncant nggggggtng	780
gnggttccc	789

<210> 11

<211> 772

<212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(772)
 <223> n = A,T,C or G

<400> 11

ccccacctac	ccaaatatta	gacaccaaca	cagaaaagct	agcaatggat	tcccttctac	60
tttgttaaat	aaataagtta	aatattttaa	tgcctgtgtc	tctgtgatgg	caacagaagg	120
accaaagggc	cacatcctga	taaaaggtaa	gaggggggtg	gatcagcaaa	aagacagtgc	180
tgtgggctga	ggggacctgg	ttcttgtgtg	ttgccccca	ggactcttcc	cctacaaata	240
actttcatat	gttcaaatac	catggaggag	tgtttcatcc	tagaaactcc	catgcaagag	300
ctacattaaa	cgaagctgca	ggtaaggagg	cttanagatg	ggaaaccagg	tgactgagtt	360
tattcagctc	ccaaaaaccc	ttctctaggt	gtgtctcaac	taggaggcta	gctgttaacc	420
ctgagcctgg	gtaatccacc	tgcagagtcc	ccgcattcca	gtgcatggaa	cccttctggc	480
ctccctgtat	aagtccagac	tgaaaccccc	ttggaaggnc	tccagtcagg	cagccctana	540
aactggggaa	aaaagaaaag	gacgccccan	ccccagctg	tgcantacg	cacctcaaca	600
gcacaggggtg	gcagcaaaaa	aaccacttta	ctttggcaca	aacaaaaact	ngggggggca	660
accccgccac	cccnangggg	gttaacagga	ancngggnaa	cntggaaccc	aattnaggca	720
ggcccnccac	ccnaatntt	gctgggaaat	ttttcctccc	ctaaatntt	tc	772

<210> 12
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(751)
 <223> n = A,T,C or G

<400> 12

gccccatttc	cagctgccac	accacccacg	gtgactgcat	tagttcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tcgtgagcct	tttgcttggt	gcaggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtanggtg	agtcctcaaa	atccgtatag	ttgggtgaagc	cacagcactt	gagccctttc	240
atgggtgggt	tccacacttg	agtgaagtct	tcttggggaa	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	ggaagtgtct	agccattgtg	gtgtacacca	aggcgaccac	360
agcagctgcn	acctcagcaa	tgaagatgan	gaggangatg	aagaagaacg	tcncgagggc	420
acacttgctc	tcagtcttan	caccatanca	gcccntgaaa	accaananca	aagaccacna	480
cnccggctgc	gatgaagaaa	tnaccccneg	ttgacaaact	tgcatggcac	tggganccac	540
agtgggccna	aaaatcttca	aaaaggatgc	cccatcnatt	gaccccccaa	atgccactg	600
ccaacagggg	ctgccccacn	cncnnaacga	tgancnatt	gnacaagatc	tncntgggtc	660
tnatnaacnt	gaacctgcn	tngtggctcc	tgttcaggnc	cnnggcctga	cttctnaann	720
aangaactcn	gaagncccca	cngganann	g			751

<210> 13
 <211> 729
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(729)
 <223> n = A,T,C or G

<400> 13

gagccaggcg	tccctctgcc	tgcccactca	gtggcaacac	ccgggagctg	ttttgtcctt	60
tgtggancct	cagcagtncc	ctctttcaga	actcantgcc	aaganccctg	aacaggagcc	120
accatgcagt	gcttcagctt	cattaagacc	atgatgatcc	tcttcaattt	gctcatcttt	180
ctgtgtggtg	cagccctggt	ggcagtgggc	atctgggtgt	caatcgatgg	ggcatccttt	240
ctgaagatct	tcgggccact	gtcgtccagt	gccatgcagt	ttgtcaacgt	gggtacttc	300
ctcatcgag	ccggcgttgt	ggtcttagct	ctaggtttcc	tgggctgcta	tgggtgctaag	360
actgagagca	agtgtgccct	cgtgacgttc	ttcttcatcc	tcctcctcat	cttcattgct	420
gaggttgcaa	tgctgtggtc	gccttggtgt	acaccacaat	ggctgagcac	ttcctgacgt	480
tgctggtaat	gcctgccatc	aanaaaagat	tatgggttcc	caggaanact	tcactcaagt	540
gttggaacac	caccatgaaa	gggtcaagt	gctgtggctt	cnnccaacta	tacggatttt	600
gaagantcac	ctacttcaaa	gaaaanagt	cctttccccc	atttctgttg	caattgacaa	660
acgtcccca	cacagccaat	tgaaaacctg	cacccaaccc	aaanggggtcc	ccaaccanaa	720
attnaagg						729

<210> 14

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (816)

<223> n = A,T,C or G

<400> 14

tgtcttctct	caaagttggt	cttgttgcca	taacaaccac	cataggtaaa	gcgggagcag	60
tgttcgctga	aggggttgta	gtaccagcgc	gggatgctct	ccttgcaag	tcctgtgtct	120
ggcagggtcca	cgcagtcccc	tttgtcactg	gggaaatgga	tgcgctggag	ctcgtcaaag	180
ccactcgtgt	atttttcaca	ggcagcctcg	tccgacgcgt	cggggcagtt	gggggtgtct	240
tcacactcca	ggaaactgtc	natgcagcag	ccattgtctg	agcggaaactg	ggtgggctga	300
cangtgccag	agcacactgg	atggcgccct	tccatgnnan	gggccctgng	ggaaagtccc	360
tganccccan	anctgcctct	caaangcccc	accttgacac	ccccgacagg	ctagaatgga	420
atcttcttcc	cgaaaggtag	ttnttcttgt	tgcccaancc	anccccntaa	acaaactctt	480
gcanatctgc	tccngggggg	tctantacc	ancgtgggaa	agaacccca	ggcngcgaac	540
caancttggt	tggatncgaa	gcnaaatct	ncntttctgc	ttggtggaca	gcaccantna	600
ctgtnnanct	ttagnccttg	gtcctcttgg	gttgnncttg	aacctaatcn	ccnntcaact	660
gggacaaggt	aantngccnt	cctttnaatt	cccnancntn	ccccctggtt	tggggttttt	720
cncnctccta	ccccagaaan	nccgtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
cacaaccctn	ccccacccac	gggttcngnt	ggttng			816

<210> 15

<211> 783

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (783)

<223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggcata	nacttgaagg	tacaacccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagattgg	cgcctactgc	ggggtgacac	ggatgtcagg	gtagagagga	120
aagaccccaa	ccaggtggaa	ctgtggggac	tcaagggaang	cacctacctg	ttccagctga	180
cagtgactag	ctcagaccac	ccagaggaca	cggccaacgt	cacagtcact	gtgctgtcca	240
ccaagcagac	agaagactac	tgcctcgcac	ccaacaangt	gggtcgctgc	cggggctctt	300
tcccacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttcggt	tatggaggct	360


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gcttgggcaa caagaacaac taccttcggg aagaagagtg cattctancc tgtcnnggtg 420
tgcaagggtg gcctttgana ngcanctctg gggctcangc gactttcccc cagggccctt 480
ccatggaaag gcgccatcca ntgttctctg gcacctgtca gccacccag ttccgctgca 540
ncaatggctg ctgcatcnac antttcctng aattgtgaca acacccccca ntgcccccaa 600
ccctcccaac aaagcttccc tgttnaaaaa tacnccantt ggcttttnac aaacncccg 660
cncctcctt tccccnntn aacaaagggc nctngcnttt gaactgccc n aaccnggaa 720
tctnccnngg aaaaantncc ccccttggtt cctnnaance cctccncnaa anctncccc 780
ccc 783

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<210> 16
<211> 801
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(801)
<223> n = A,T,C or G

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<400> 16
gccccaatc cagctgccac accaccacg gtgactgcat tagttcggat gtcatacaaa 60
agctgattga agcaaccctc tacttttttg tctgtagcct tttgcttggt gcagggttca 120
ttggctgtgt tgggtgacgtt gtcattgcaa cagaatggg gaaaggcact gttctctttg 180
aagtaggggtg agtcctcaaa atccgtatag ttggtgaagc cacagcactt gagccctttc 240
atgggtgggtg tccacacttg agtgaagtct tcttgggaac cataatcttt cttgatggca 300
ggcactacca gcaacgtcag gaagtgtcga gccattgtgg tgtacaccaa ggcgaccaca 360
gcagctgca cctcagcaat gaagatgagg aggaggatga agaagaacgt cncgagggca 420
cacttgctct cctgttttagc accatagcag cccangaaac caagagcaaa gaccacaacg 480
cngctgcca atgaaagaaa ntaccacagt tgacaaactg catggccact ggacgacagt 540
tggcccgaan atcttcagaa aagggatgcc ccatcgattg aacaccana tggccactgc 600
cnacagggct gncncncn gaaagaatga gccattgaag aaggatcntc ntgggtcttaa 660
tgaactgaaa cntgcatgg tggccctgt tcaaggctct tggcagtga ttctganaaa 720
aaggaacngc nttagcccc ccaaangana aaacaccccc ggggtgttgc ctgaattggc 780
ggccaaggan cctgccccn g 801

```

```

<210> 17
<211> 740
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(740)
<223> n = A,T,C or G

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<400> 17
gtgagagcca ggctccctc tgccctgcca ctcagtggca acacccggga gctgttttgt 60
cctttgtgga gcctcagcag tccctctttt cagaactcac tgccaagagc cctgaacagg 120
agccaccatg cagtgettca gcttcattaa gaccatgatg atcctcttca atttgctcat 180
ctttctgtgt ggtgcagccc tgttggcagt gggcatctgg gtgtcaatcg atggggcatc 240
ctttctgaag atcttcgggc cactgtcgtc cagtggccatg cagtttgtca acgtgggcta 300
cttctctatc gcagccggcg ttgtggtctt tgctcttggt ttcctgggct gctatgggtc 360
taagacggag agcaagtgtg cctcgtgac gttctcttcc atcctcctcc tcatcttcat 420
tgctgaagtt gcagctgctg tggctgcctt ggtgtacacc acaatggctg aaccattcct 480
gacgttgctg gtantgcctg ccatcaanaa agattatggg tcccaggaa aaattcactc 540
aantntggaa caccnccatg aaaagggtc caatttctgn tggttcccc aactataaccg 600
gaattttgaa agantnccc tacttccaaa aaaaaanant tgccttttnc cccnttctgt 660
tgaatgaaa acntcccaan acngccaatn aaaacctgcc cnnncaaaaa ggnctcncaa 720

```

caaaaaaant nnaagggttn

740

<210> 18
 <211> 802
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1) ... (802)
 <223> n = A,T,C or G

<400> 18
 ccgctggttg cgctggtcca gngnagccac gaagcacgtc agcatacaca gcctcaatca 60
 caaggtcttc cagctgccgc acattacgca gggcaagagc ctccagcaac actgcatatg 120
 ggatacactt tacttttagca gccagggtga caactgagag gtgtcgaagc ttattcttct 180
 gagcctctgt tagtggagga agattccggg cttcagctaa gtagtcagcg tatgtcccat 240
 aagcaaacac tgtgagcagc cggaaggtag aggcaaagtc actctcagcc agctctctaa 300
 cattgggcat gtccagcagt tctccaaaca cgtagacacc agnggcctcc agcacctgat 360
 ggatgagtgt ggccagcgct gcccccttgg ccgacttggc taggagcaga aattgctcct 420
 ggttctgccc tgtcaccttc acttcgcgac tcatcactgc actgagtgtg ggggacttgg 480
 gctcaggatg tccagagacg tggttccgcc ccctcnctta atgacaccgn ccanncaacc 540
 gtcggctccc gccgantgng ttcgtcgtnc ctgggtcagg gtctgctggc cncacttgc 600
 aancttcgtc nggcccattg aattcaccnc accggaactn gtangatcca ctnnttctat 660
 aaccggnccg caccgcnnnt ggaactccac tcttnttnc tttacttgag ggttaaggtc 720
 acccttnnccg ttaccttggc ccaaaccntn ccntgtgtcg anatngtnaa tcnggnccna 780
 tnccancnc atangaagc ng 802

<210> 19
 <211> 731
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1) ... (731)
 <223> n = A,T,C or G

<400> 19
 cnaagcttcc aggtnacggg ccgcnaance tgaccnagg tancanaang cagnncgagg 60
 gagcccaccg tcacngggng gngtctttat nggagggggc ggagccacat cncgtggacnt 120
 cntgacccca actcccncc ncnantgca gtgatgagtg cagaactgaa ggtnacgtgg 180
 caggaaccaa gancaaannc tgctccnntc caagtcggcn nagggggcgg ggctggccac 240
 gncatccnt cnagtgtctn aaagcccnnc cctgtctact tgtttgaga acngcnnga 300
 catgcccagn gttanataac nggcngagag tnantttgcc tctcccttcc ggtgcgcan 360
 cgngtntgct tagnggacat aacctgacta cttaactgaa ccnngaate tncnccct 420
 ccactaagct cagaacaaaa aacttcgaca ccactcantt gtcacctgnc tgctcaagta 480
 aagtgtaccc catncccaat gtntgctnga ngctctgncc tgcnttangt tcggctctgg 540
 gaagacctat caattnaagc tatgtttctg actgcctctt gctccctgna acaancnacc 600
 cnncnntcca agggggggnc ggcccccaat ccccccaacc ntnaattnan tttancccn 660
 cccccnggcc cggcctttta cnancntenn nnacngggna aaaccnnngc tttncccaac 720
 nnaatccncc t 731

<210> 20
 <211> 754
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(754)
 <223> n = A,T,C or G

<400> 20
 . tttttttttt tttttttttt taaaaacccc ctccattnaa tgnaaacttc cgaaattgtc 60
 caacccccctc ntccaaatnn ccntttccgg gnggggggttc caaacccaan ttanntttgg 120
 annttaaatt aaatnttntt tggnggnnna anccnaatgt nangaaagt naaccanta 180
 tnancttnaa tncctggaaa ccngtngntt ccaaaaatnt ttaaccctta antccctccg 240
 aaatngttna nggaaaaccc aanttctct aaggttggtt gaaggntnaa tnaaaanccc 300
 nnccaattgt ttttngccac gcctgaatta attggnttcc gntgttttcc nttaaaanaa 360
 gggnancccc gggtantnaa tcccccnnc cccaattata ccganttttt ttngaattgg 420
 gancccnccg gaattaacgg ggnnnttccc tnttgggggg cnggnncccc ccccntcggg 480
 ggttngggnc aggnccnaat tgtttaaggg tccgaaaaat ccctccnaga aaaaaanctc 540
 ccaggntgag nntnggggtt ncccccccc cangggccct ctcgnanagt tgggggttgg 600
 ggggcctggg attttntttc ccctnttnc tcccccccc ccngggganag aggttngngt 660
 tttgntcnnc ggccccnccn aaganctttn ccganttnan ttaaatccnt gcctnggcga 720
 agtcenntgn agggntaaan ggccccctnn cggg 754

<210> 21
 <211> 755
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(755)
 <223> n = A,T,C or G

<400> 21
 atcancccat gaccccnac nngggaccnc tcancgggnc nnncnaccnc cggccnatca 60
 nngtnagnnc actnctntn natcacnccc cncnactac gcccnananc cnacgcnccta 120
 nncanctncc actganngcg cgangtngan ngagaaanct nataccanag ncaccanacn 180
 ccagctgtcc nanaangcct nnnatacnng nnnatccaat ntgnancctc cnaagtattn 240
 nncnncanat gattttcctn anccgattac ccntncccc tanccctcc cccccaacna 300
 cgaaggcnct ggncncaagg nngcgncccc ccgctagntc ccnncaagt cncncncta 360
 aactcancn nattaacncc ttcttgagta tcaactcccc aatctcacc tactcaactc 420
 aaaaaanctn gatacaaat aatncaagcc tgnttatnac actntgactg ggtctctatt 480
 ttagnngtcc ntnaanctc ctaatacttc cagctcncct tcnccaattt ccnaanggct 540
 ctttcngaca gcatnttttg gttcccnntt gggttcttan ngaattgccc ttentngaac 600
 gggtctntct tttccttcgg ttancctggn ttcnnccggc cagttattat tccccntttt 660
 aaattctntc cntttanttt tggcnttcna aacccccggc cttgaaaacg gccccctggt 720
 aaaaggttgt tttganaaaa tttttgtttt gttcc 755

<210> 22
 <211> 849
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(849)
 <223> n = A,T,C or G

<400> 22
 tttttttttt tttttangtg tngtcgtgca ggtagaggct tactacaant gtgaanacgt 60
 acgctnggan taangcgacc cgantttctag ganncnccct aaaatcanac tgtgaagatn 120

atcctgnnna	cggaanggtc	accggnggat	nntgctaggg	tgncnctcc	cannncnttn	180
cataactcng	nggcectgcc	caccaccttc	ggcggcceng	ngnecgggcc	cgggtcattn	240
gnnttaaccn	cactnngcna	ncggtttccn	cccccnncng	accnnggcga	tccgggggtnc	300
tctgtcttcc	cctgnagncn	anaaantggg	ccnecgnccc	ctttaccctt	nnacaagcca	360
cngcctcta	ncnncgccc	ccccctcant	nngggggact	gcnannget	ccgttntctng	420
nnaccccnnn	gggtncctcg	gttgctcgant	cnaccgnang	ccanggattc	cnaaggaagg	480
tgcgttnttg	gccccctacc	ttegtctnccg	nnacaccttc	ccgacnanga	nccgctccccg	540
cncnncgnng	cctcncctcg	caacacccgc	ntctntcngt	ncggnnnccc	ccccacccgc	600
nccctcncnc	ngnecgnancn	ctcncncnc	gtctcannca	ccaccccgcc	ccgccaggcc	660
ntcanccacn	ggnngacnng	nagcncntc	gcncgcgcgn	gcgnncctt	cgcncngaa	720
ctnctcngg	ccantnncgc	tcaancenna	cnaaacgcgc	ctgcgcggcc	cgnagcgncc	780
ncctcncga	gtctctccgn	cttcenaccc	angnnttccn	cgaggacacn	nnaccccgcc	840
nncangcgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 23

gcgcaaaacta	tacttcgctc	gnactcgtgc	gcctcgcctnc	tcttttcctc	cgcaaccatg	60
tctgacnanc	ccgattnggc	ngatatacnan	aagntcganc	agtccaaact	gantaacaca	120
cacacnncan	aganaaatcc	nctgccttcc	anagtanacn	attgaacnng	agaaccangc	180
nggcgaatcg	taatnaggcg	tgcgcgcgcca	atntgtcncc	gtttattntn	ccagctcnc	240
ctnccnacc	tacntcttcn	nagctgtcnn	acccctngtn	cgnacccccc	naggctcgga	300
tgcgggttttn	nntgaccgng	cnccccctcc	ccccctccat	nacganccnc	ccgcaccacc	360
nanngcncgc	cccccggnct	cttcgcncnc	ctgtcctntn	ccccctgtngc	ctggcncngn	420
accgcattga	ccctcgccnn	ctncnngaaa	ncgnanacgt	ccgggttggn	annancgctg	480
tgggnnngcg	tctgcncgcg	gttccttcen	nenncttcca	ccatcttctt	taanggggtct	540
cencgccttc	tcnnncaanc	cctgggaagc	tnctcctntg	cccccttnac	tccccccctt	600
cgnctgtnc	cgnccccacc	ntcatttnca	nacgntcttc	acaannncct	ggntnnctcc	660
cnanngnncn	gtcancnag	ggaagggngg	ggnnccnntg	nttgacgttg	ngngnangtc	720
cgaanantcc	tcnctcncan	cncctaccct	cgggcgnnct	ctcngttncc	aacttancaa	780
ntctcccccg	ngngcncntc	tcagcctcnc	cncceccnct	ctctgcantg	tnctctgctc	840
tnaccnntac	gantnttcgn	cncctctctt	cc			872

<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(815)

<223> n = A,T,C or G

<400> 24

gcattgcaagc	ttgagtattc	tatagngtca	cctaaatanc	ttggcntaat	catggctenta	60
nctgncttcc	tgtgtcaaat	gtatacnaa	tanatatgaa	tctnatntga	caaganngta	120
tctntcatta	gtacaantg	tnntgtccat	cctgtcngan	canattccca	tnnattncgn	180
cgcattcncn	gencantatn	taatngggaa	ntcnntnnnn	ncaccnncat	ctatctncc	240
gcnccttgac	tgganagagat	ggatnanttc	tnntntgacc	nacatgttca	tcttggattn	300
aanaccccc	cgcngnccac	cggttngnng	cnagccnntc	ccaagacctc	ctgtggagggt	360

aacctgcgtc	aganncatca	aacntgggaa	accgcgncc	angtnnaagt	ngnnncanan	420
gateccgtcc	aggnttnacc	atcccttcnc	agcgccccct	ttngtgcctt	anagnnagc	480
gtgtccnanc	cnetcaacat	ganacgcgcc	agnccanceg	caattnggca	caatgtcgnc	540
gaaccccccta	gggggantna	tncaaanccc	caggattgtc	cnncangaa	atcccncanc	600
ccnccctac	ccncttttg	gacngtgacc	aantcccgga	gtncagtc	ggcngnctc	660
ccccaccggt	nncntgggg	gggtgaanct	cngnntcanc	cngncgaggn	ntcgnaagga	720
accggnccctn	ggncgaanng	ancnntcnga	agngccnct	cgtataaccc	cccctcncca	780
nccnacngnt	agntccccc	cngggtnccg	aangg			815

<210> 25

<211> 775

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(775)

<223> n = A,T,C or G

<400> 25

ccgagatgtc	tcgtccgtg	gccttagctg	tgctcgcgt	actctctctt	tctggcctgg	60
aggctatcca	gcgtactcca	aagattcagg	tttactcacg	tcateccagca	gagaatggaa	120
agtcaaattt	cctgaattgc	tatgtgtctg	ggtttcaccc	atccgacatt	gaanttgcct	180
tactgaagaa	tgganagaga	attgaaaaag	tggagcattc	agacttgtct	ttcagcaagg	240
actggtcttt	ctatctctng	tactacactg	aattcacccc	cactgaaaaa	gatgagtatg	300
cctggcgtgt	gaaccatgtg	actttgtcac	agcccaagat	agttaagtgg	gatcgagaca	360
tgtaagcagn	cnnatggaa	gtttgaagat	gccgcatttg	gattggatga	attccaaatt	420
ctgcttgctt	gcnttttaat	antgatatgc	ntatacaccc	taccctttat	gncccaaat	480
tgtaggggtt	acatnantgt	tcnctnngga	catgatcttc	ctttataant	ccnccnttcg	540
aattgcccgt	cncnngttn	ngaattgttc	cnaaaccacg	gttggtctcc	ccaggtcncc	600
tcttacggaa	gggcctgggc	cnccttncaa	ggttggggga	accnaaaatt	tcncttntgc	660
ccncccncca	cnntcttgng	nncncanttt	ggaacccttc	cnattccctt	tggcctcnna	720
nccttnncta	anaaaacttn	aaancgtngc	naaanntttn	acttccccc	ttacc	775

<210> 26

<211> 820

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(820)

<223> n = A,T,C or G

<400> 26

anattantac	agtgtaatct	tttcccagag	gtgtgtanag	ggaacggggc	ctagaggcat	60
cccanagata	ncttatanca	acagtgcctt	gaccaagagc	tgctgggcac	atttcctgca	120
gaaaagggtg	cgtccccc	cactcctcct	ctcccatagc	catcccagag	gggtgagtag	180
ccatcangcc	ttcgggtggga	gggagtcang	gaaacaacan	accacagagc	anacagacca	240
ntgatgacca	tgggcgggag	cgagcctctt	ccctgnaccg	gggtggcana	nganagccta	300
nctgaggggt	cacactataa	acgttaacga	ccnagatnan	cacctgcttc	aagtgcaccc	360
ttcctacctg	acnaccagng	accnnnaact	gcngcctggg	gacagcncgt	ggancagcta	420
acnnagcact	cacctgcccc	cccatggcgg	tnccgntccc	tggtcctgnc	aagggaagct	480
ccctgttgga	attncggggga	naccaagggga	nccccctcct	ccanctgtga	aggaaaaann	540
gatggaattt	tncccttcgg	gccnntcccc	tcttctctta	caagccccct	nntactcnc	600
tccctctntt	ntcctgnenc	acttttnacc	ccnnnatctt	ccttnattga	tcggannctn	660
ganattccac	tnncgcctnc	cntcnatcng	naanacnaaa	nactntctna	ccnnggggat	720
gggnncctcg	ntcatcctct	ctttttcnct	accnccnntt	ctttgcctct	ccttngatca	780

tccaacntc gntggcctn ccccccnnn tcctttncce

820

<210> 27
 <211> 818
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A,T,C or G

<400> 27
 tctgggtgat ggctcttcc tcctcagga cctctgactg ctctgggcca aagaatctct 60
 tgttttctt cgcagcccca ggcagcggg attcagccct gcccaacctg attctgatga 120
 ctgcggatgc tgtgacggac ccaaggggca aataggggtcc caggggtccag ggaggggccc 180
 ctgctgagca cttccgcccc tcacctgccc cagcccttgc catgagctct gggtgggtc 240
 tccgcctcca ggggttctgct cttccangca ngccancaa tggcgtggg ccacactggc 300
 ttcttcttgc cccntccctg gctctgante tctgtcttcc tgtcctgtgc angcnccttg 360
 gatctcagtt tccctcctc anngaactct gtttctgann tcttcantta actntgantt 420
 tatnaccnan tggnetgtnc tgcnnactt taatgggccc gaccggctaa tccctccctc 480
 nctcccttcc anttcnnna accngcttnc cntctcttcc cntancccg ccngggaanc 540
 ctcccttgc ctnaccang gccnnnaccg ccentnnctn ggggggcnng gtnnctnnc 600
 ctgntnccc cncctcncnt tncctgctc cncnncgcn nngcannttc ncngtcccn 660
 tnnctcttcn ngntcgnaa ngntcncntn tnnnnngcn ngntnntncc tccctctcnc 720
 cnnntgnang tnnntnnnn ncngncccc nnnnnnnnn nggnnnntnn tctnncngc 780
 cccnncccc ngnattaagg cctcncntct ccggccnc 818

<210> 28
 <211> 731
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(731)
 <223> n = A,T,C or G

<400> 28
 aggaagggcg gagggatatt gtangggatt gagggatagg agnataangg gggaggtgtg 60
 tccaacatg anggtgnngt tctcttttga angaggggtg ngtttttann ccnggtgggt 120
 gattnaaccc cattgtatgg agnnaaagg ttttagggat ttttcggctc ttatcagtat 180
 ntanattcct gtnaatcgga aaatnatntt tcnnncggaa aatnttgctc ccatccgnaa 240
 attnctccc ggtagtgcatt nttngggggg cngccangtt tcccaggtc ctanaatcgt 300
 actaaagntt naagtggan tncaaatgaa aacctnnac agagnatccn taccgactg 360
 tnnnttccct tgcctctng actctgcnn agcccaatac ccngngnat gtcncccn 420
 nnngegnnc tgaaannnn tcgnggctnn gancatcang gggtttcgca tcaaaagcnn 480
 cgtttcncat naaggcactt tngcctcatc caaccnctng cctcnncca tttngcctc 540
 nggttcncc acgtntntng cncctnnntn ganattttnc ccgcttnggg naancctcct 600
 gnaatgggta gggnccttntc ttttnaccnn gnggtntact aatcnnctnc acgctnctt 660
 tctnaccce ccccttttt caatccccc ggcnaatggg gtctccccnn cgangggggg 720
 nnnccannc c 731

<210> 29
 <211> 822
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(822)
 <223> n = A,T,C or G

<400> 29
 actagtccag tgtggtggaa ttccattgtg ttgggggnenc ttctatgant antnttagat 60
 cgctcanacc tcacancctc ccnacnangc ctataangaa nannaataga nctgtncnnt 120
 atntntacnc tcatanncct cnnnacccac tccctcttaa cccntactgt gcctatngcn 180
 tnnctantct ntggcgccctn cnanccaccn gtggggccnac cncnngnatt ctcnatctcc 240
 tcnccatntn gcctananta ngtncatacc ctatacctac nccaatgcta nnnctaancn 300
 tccatnantt annntaacta ccaactgacnt ngactttcnc atnanctcct aattttgaatc 360
 tactctgact cccacngcct annnattagc ancntccccc nacnatntct caaccaaatc 420
 ntcaacaacc tatctanctg ttcnccaacc nttncctccg atccccnnac aacccccctc 480
 ccaaataccc nccacctgac ncctaaccn caccateccg gcaagccnan ggcattttan 540
 ccaactggaat cacnatngga naaaaaaaac ccnaactctc tancncnnat ctcccctaana 600
 aatnctcctn naattttactn ncantnccat caancccaen tgaaacnnaa cccctgtttt 660
 tanatccctt ctttcgaaaa ccnacccttt annncccaac ctttngggcc ccccnctnc 720
 ccnaatgaag gncncccaat cnangaaacg nccntgaaaa ancnaggcna anannntccg 780
 canatcctat cccttanttn ggggnccctt nccngggcc cc 822

<210> 30
 <211> 787
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(787)
 <223> n = A,T,C or G

<400> 30
 cggccgcctg ctctggcaca tgccctcctga atggcatcaa aagtgatgga ctgcccattg 60
 ctagagaaga ccttctctcc tactgtcatt atggagccct gcagactgag ggctccccctt 120
 gtctgcagga tttgatgtct gaagtcgtgg agtgtggctt ggagctcctc atctacatna 180
 gctggaagcc ctggaggggc tctctcgcca gcctccccct tctctccacg ctctccangg 240
 acaccagggg ctccaggcag cccattatc ccagnangac atgggtgtttc tccacgcgga 300
 cccatggggc ctgnaaggcc agggctcctt ttgacaccat ctctcccgctc ctgcctggca 360
 ggccgtggga tccactantt ctanaacggg cggcaccncg gtgggagctc cagcttttgt 420
 tcccnttaat gaaggttaat tgcncgcttg gcgtaatcat nggtcanaac tntttcctgt 480
 gtgaaattgt ttntccccctc ncnatccnc ncnacatacn aacccggaan cataaagtgt 540
 taaagcctgg gggtngectn nngaataaac tnaactcaat taattgcgtt ggctcatggc 600
 ccgctttccn ttcnggaaaa ctgtcntccc ctgcnttnnt gaatcgcca cccccnggg 660
 aaaagcggtt tgcnttttng ggggntcctt ccncttcccc cctcnctaan cccnncgct 720
 cggtcgttnc nggtngcggg gaangggnat nnnctccnc naagggggng agnnngntat 780
 ccccaaa 787

<210> 31
 <211> 799
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(799)
 <223> n = A,T,C or G

<400> 31

tttttttttt	tttttttggc	gatgetactg	tttaattgca	ggaggtgggg	gtgtgtgtac	60
catgtaccag	ggctattaga	agcaagaagg	aaggaggagg	ggcagagcgc	cctgctgagc	120
aacaaaggac	tcctgcagcc	ttctctgtct	gtctcttggc	gcaggcacat	ggggaggcct	180
cccgcagggt	ggggggccacc	agtccagggg	tgggagcact	acanggggtg	ggagtgggtg	240
gtggctggtg	cnaatggcct	gncacanatc	cctacgattc	ttgacacctg	gatttcacca	300
ggggaccttc	tgttctccca	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	ggctgttcat	ggaaagcaca	ggtgtccnat	ttnggctggg	acttggtaca	420
tatggttccg	gcccacctct	ccntcnaaan	aagtaattca	ccccccccc	ccntctnttg	480
cctgggccct	taantaccca	caccggaact	canttantta	ttcatcttng	gntgggcttg	540
ntnatcnccn	cctgaangcg	ccaagttgaa	aggccacgcc	gtncnccnctc	cccatagnan	600
ntttttnnct	canctaatac	ccccccnggc	aacnatccaa	ccccccccc	tgggggcccc	660
agcccanggc	ccccgnetcg	ggnnnccngn	cncgnantcc	ccaggntctc	ccantcngnc	720
ccnnngcncc	cccgcacgca	gaacanaagg	ntngagccnc	cgcannnnnn	nggtnncnac	780
ctcgcccccc	ccnnccgng					799

<210> 32

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(789)

<223> n = A,T,C or G

<400> 32

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
ttttnccnag	ggcaggttta	ttgacaacct	cnogggacac	aancaggctg	gggacaggac	120
ggcaacaggc	tccggcgggc	gcgggcgggc	ccctacctgc	ggtaccaaat	ntgcagcctc	180
cgctcccgcg	tgatnttcc	ctgcagctgc	aggatgcct	aaaacagggc	ctcgccctn	240
ggtgggcacc	ctgggatttn	aatttccacg	ggcacaatgc	ggtcgcance	cctcaccacc	300
natttagaat	agtgtnttta	ccnccnccg	ttggcncact	ccccntggaa	accactntc	360
gcggctccgg	catctggctc	taaaccttgc	aaacnctggg	gccctctttt	tggttantnt	420
nccngccaca	atcatnactc	agactggcnc	gggctggccc	caaaaaancn	ccccaaaacc	480
ggncatgtc	ttnnccgggt	tgctgcnatn	tncatcacct	cccgggcnca	ncaggncaac	540
ccaaaagtgc	ttngggcccn	caaaaaanct	ccggggggnc	ccagtttcaa	caaagtcac	600
ccccttggcc	cccaaatcct	ccccccgntt	netgggtttg	ggaacccacg	cctctnnctt	660
tggnnggcaa	gntggntccc	ccttcggggc	cccgggtggg	ccnnctctaa	ngaaaacncc	720
ntectnnnca	ccatcccccc	nngnnacgnc	tancaangna	tccctttttt	tanaaacggg	780
ccccccnccg						789

<210> 33

<211> 793

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(793)

<223> n = A,T,C or G

<400> 33

gacagaacat	ggtggatggt	ggagcacctt	tctatacgac	ttacaggaca	gcagatgggg	60
aattcatggc	tggtggagca	atanaacccc	agttctacga	gctgctgatc	aaaggacttg	120
gactaaagtc	tgatgaactc	cccaatcaga	tgagcatgga	tgattggcca	gaaatgaana	180
agaagtttgc	agatgtattt	gcaaagaaga	cgaaggcaga	gtggtgtcaa	atctttgacg	240
gcacagatgc	ctgtgtgact	ccggttctga	cttttgagga	ggttggtcat	catgatcaca	300
acaangaacg	gggctcggtt	atcaccantg	aggagcagga	cgtgagcccc	cgccctgcac	360


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ctctgctgtt aaacacccca gccatccctt ctttcaaaag ggatccacta cttctagagc 420
ggncgccacc gcggtggagc tccagctttt gttcccttta gtgaggggta attgcgcgct 480
tggcgtaatc atgggtcatan ctgtttcctg tgtgaaattg ttatccgctc acaattccac 540
acaacatacg anccggaagc atnaaatttt aaagcctggn ggtngcctaa tgantgaact 600
nactcacatt aattggcttt gcgctcactg cccgctttcc agtccggaaa acctgtcctt 660
gccagctgcc nttaatgaat cnggccaccc cccggggaaa aggcngtttg cttnttgggg 720
cgcncttccc gctttctcgc ttectgaant ccttcccccc ggtctttcgg cttgcggcna 780
acggtatcna cct 793

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<210> 34
<211> 756
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(756)
<223> n = A,T,C or G

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<400> 34
gccgcgaccg gcatgtacga gcaactcaag ggcgagtggga accgtaaaag ccccaatctt 60
ancaagtgcg gggaanagct gggtcgactc aagctagttc ttctggagct caacttcttg 120
ccaaccacag ggaccaagct gaccaaacag cagctaattc tggcccgtga catactggag 180
atcgggggccc aatggagcat cctacgcaan gacatcccct ccttcgagcg ctacatggcc 240
cagctcaaat gctactactt tgattacaan gagcagctcc ccgagtcagc ctatatgcac 300
cagctcttgg gcctcaacct cctcttcctg ctgtcccaga accgggtggc tgantnccac 360
acgganttgg ancggctgcc tgcccanga catacanacc aatgtctaca tcnaccacca 420
gtgtccttga gcaatactga tgganggcag ctaccncaa gtnttcttgg ccnagggtaa 480
catccccgcg cgagagctac accttcttca ttgacatcct gctcgacact atcagggatg 540
aaaatcgcn ggttgctcca gaaaggctnc aanaanatcc ttttctctga agggcccccg 600
atnctnctagt nctagaatcg gcccggccatc gcggtgganc ctccaacctt tegttnccct 660
ttactgaggg ttnattgccg cccttggcgt tatcatggtc acncngttn cctgtgttga 720
aattnttaac cccccacaat tccacgcena cattng 756

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<210> 35
<211> 834
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(834)
<223> n = A,T,C or G

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<400> 35
ggggatctct anactnacct gnatgcatgg ttgtcggtgt ggtcgctgtc gatgaanatg 60
aacaggatct tgcccttgaa gctctcggct gctgtnttta agttgctcag tctgccgtca 120
tagtcagaca cnctcttggg caaaaaacan caggatntga gtcttgattt cacctccaat 180
aatcttcngg gctgtctgct cgggtgaactc gatgacnang ggcagctggg tgtgtntgat 240
aaantccanc angttctcct tgggtgacctc cccttcaaag ttgttcgggc cttcatcaaa 300
cttctnnaan angannance canctttgtc gagctggnat ttgganaaca cgtcactgtt 360
ggaaactgat cccaaatggt atgtcatcca tcgcctctgc tgccctgcaa aaacttgctt 420
ggcncaaate cgactcccn tecttgaaag aagccnatca cccccctc cctggactcc 480
nncaangact ctncgcgtnc ccntccnng cagggttggg ggcanncgg gccntgcgc 540
ttcttcagcc agttcacnat ntcatcagc ccctctgcca gctgttntat tecttggggg 600
ggaanccgtc tctcccttcc tgaannaact ttgaccgtng gaatagccgc gcntcncnt 660
acntnctggg ccgggttcaa antecctecn ttgncntcn cctcgggcca ttctggattt 720
nccnaacttt tctctcccc cnccecneg ngtttggnnt tttcatnggg ccccaactct 780

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gctnttg gcc antcccctgg gggcntntan cccccctnt ggtcccntng gcc

834

<210> 36
 <211> 814
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(814)
 <223> n = A,T,C or G

<400> 36
 cggncgcttt ccngccg cgc cccgtttcca tgacnaaggc tcccttcang ttaaatacnn 60
 cctagnaaac attaatgggt tgctctacta atacatcata cnaaccagta agcctgccc 120
 naacgccaac tcaggccatt cctaccaaag gaagaaaggc tggctctctcc accccctgta 180
 ggaaaggcct gccttgtaag acaccacaat ncggctgaat ctnaagtctt gtgttttact 240
 aatggaaaaa aaaaataaac aanagggtttt gttctcatgg ctgcccaccg cagcctggca 300
 ctaaaacanc ccagcgctca cttctgcttg ganaaatatt ctttgctctt ttggacatca 360
 ggcttgatgg tatcaactgcc acntttccac ccagctgggc ncccttcccc catntttgtc 420
 antganctgg aaggcctgaa ncttagtctc caaaagtctc ngcccacaag accggccacc 480
 aggggangtc ntttncagtg gatctgccaa anantaccn tatcatcnnt gaataaaaag 540
 gcccctgaac ganatgcttc cancanctt taagaccat aatcctngaa ccatgggtgcc 600
 ctccgggtct gatccnaaag gaatgttctt gggteccant ccctcctttg ttntttacgt 660
 tgtnttgga cctngctngn atnaccnaan tganatcccc ngaagcacc tncctctggc 720
 atttganttt cntaaattct ctgccctacn nctgaaagca cnattccctn ggcncnaaan 780
 ggngaactca agaaggtctn ngaaaaacca cncn 814

<210> 37
 <211> 760
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(760)
 <223> n = A,T,C or G

<400> 37
 gcatgctgct ctctctcaaa gttgttcttg ttgccataac aaccaccata ggtaaagcgg 60
 gcgcagtgtt cgtgaagggt gttgtagtac cagcgcgga tgctctcctt gcagagtcct 120
 gtgtctggca ggtccacgca atgcccttg tcaactggga aatggatgag ctggagctcg 180
 tcnaanccac tcgtgtattt ttcacangca gcctcctccg aagentccgg gcagttgggg 240
 gtgtcgtcac actccactaa actgtcgatn cancagccca ttgctgcagc ggaactgggt 300
 gggctgacag gtgccagaac acactggatn ggcctttcca tggaagggcc tgggggaaat 360
 cncctnancc caaactgcct ctcaaaggcc accttgaca cccgacagg ctagaaatgc 420
 actcttcttc ccaaaggtag ttgttcttgt tgcccaagca ncctccanca aacaaaaanc 480
 ttgcaaaatc tgctccgtgg gggcatnnn taccanggtt ggggaaanaa acccgcnngn 540
 ganccnctt gtttgaatgc naaggnaata atcctcctgt cttgcttggg tggaanagca 600
 caattgaact gttaacnttg ggccgngttc cncnnggtg gtctgaaact aatcaccgtc 660
 actggaaaaa ggtangtgcc ttccttgaat tcccaantt cccctngntt tgggtntttt 720
 ctctctncc ctaaaaatcg tnttcccccc centanggag 760

<210> 38
 <211> 724
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(724)
 <223> n = A,T,C or G

<400> 38
 tttttttttt tttttttttt tttttttttt ttttttaaaaa cccctcccat tgaatgaaaa 60
 ctccnnaaat tgtccaaccc cctcnnccaa atnnccattt ccgggggggg gttccaaacc 120
 caaattaatt ttgganttta aattaaatnt tnattngggg aanaanccaa atgtnaagaa 180
 aatttaaccc attatnaact taaatncctn gaaaccctg gnttccaaaa atttttaacc 240
 cttaaattccc tccgaaattg ntaanggaaa accaaattcn cetaaggctn tttgaagggtt 300
 ngatttaaac ccccttnant tnttttnacc cnngnctnaa ntatttngnt tccggtgttt 360
 tcctnttaan cntnggtaac tcccgnataat gaannncctt aanccaatta aaccgaattt 420
 tttttgaatt ggaaattccn ngggaattna ccgggggttt tcccntttgg gggccatncc 480
 cccnctttcg ggggtttgggn ntaggttgaa tttttnnang ncccaaaaaa ncccccaana 540
 aaaaaactcc caagnnttaa ttngaattnc ccccttccca ggccttttgg gaaaggnggg 600
 tttntggggg ccngggantt cnttcccccn ttncncccc cccccnggt aaanggttat 660
 ngntttgggt ttttgggccc cttnanggac cttccggatn gaaattaaat ccccgggncg 720
 gccg 724

<210> 39
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(751)
 <223> n = A,T,C or G

<400> 39
 tttttttttt tttttctttg ctcacattta atttttattt tgattttttt taatgctgca 60
 caacacaata tttatttcat ttgtttcttt tatttcatth tatttggttg ctgctgctgt 120
 tttattttatt tttactgaaa gtgagaggga acttttgtgg ccttttttcc tttttctgta 180
 ggccgcctta agctttctaa atttggaaac tctaagcaag ctgaanggaa aaggggggtt 240
 cgcaaaatca ctccgggggaa nggaaagggt gctttgttaa tcatgcccta tgggtgggtga 300
 ttaactgctt gtacaattac ntttcacttt taattaattg tgctnaangc ttaattana 360
 cttgggggtt ccctccccc accaaccnctn ctgacaaaaa gtgccngccc tcaaatnatg 420
 tcccggcnnt cnttgaaaca cacngcngaa ngttctcatt ntcccnncnc caggtnaaaa 480
 tgaagggtta ccatntttta cncacctcc acntggcnnn gcctgaatcc tcnaaaancn 540
 ccctcaancn aattnctnng ccccggtcnc gentnngtcc cncccgggct ccgggaantn 600
 ccccccnnga anncnntnnc naacnaaatt ccgaaaatat tccnntcnc tcaattcccc 660
 cnnagactnt cctcnnncan cncaattttt ttttnttcac gaacncgnnc cnnaaatgn 720
 nnnncnctc cncnngtcen naatcnccan c 751

<210> 40
 <211> 753
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(753)
 <223> n = A,T,C or G

<400> 40
 gtgggtatttt ctgtaagatc aggtgttcct cctcgtagg tttagaggaa acaccctcat 60
 agatgaaaac ccccccgaga cagcagcact gcaactgcc aagcagccggg gtaggagggg 120

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cgccctatgc acagctgggc ccttgagaca gcagggcttc gatgtcaggc tcgatgtcaa 180
tggctctggaa gcggcggtg tacctgcgta ggggcacacc gtcagggccc accaggaact 240
tctcaaagtt ccaggcaacn tcgttgcgac acaccggaga ccaggtgatn agcttggggt 300
cggtcataaan cgcgggtggcg tcgtcgtctgg gagctggcag ggcctcccg caggaggcna 360
ataaaagggtg cgcccccgca ccgttcant cgcacttctc naanaccatg angttgggct 420
cnaaccacc accannccgg acttccttga nggaattccc aaatctcttc gntcttgggc 480
ttctnctgat gccctantg gttgcccn gnccaanca nccccaancc cgggggtcct 540
aaanaccccn cctcctcntt tcctctgggt tntntoccc ggacctggt tcctctcaag 600
ggancccata tctcnaccan tactcacnt nccccccnt gnnaccanc cttctanngn 660
tcccncccg ncctctggc cntcaanan gcttnacna cctgggtctg ccttcccccc 720
tnccctatct gnacccnncn tttgtctcan tnt 753

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<210> 41
<211> 341
<212> DNA
<213> Homo sapien

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<400> 41
actatatcca tcacaacaga catgcttcat cccatagact tcttgacata gcttcaaattg 60
agtgaaccca tccttgattt atatacatat atgttctcag tattttggga gcctttccac 120
ttctttaaac cttgttcatt atgaacactg aaaataggaa tttgtgaaga gttaaaaagt 180
tatagcttgt ttacgtagta agtttttgaa gtctacattc aatccagaca cttagttgag 240
tgtaaaactg tgatttttaa aaaatatcat ttgagaatat tctttcagag gtattttcat 300
ttttactttt tgattaattg tgttttatat attagggtag t 341

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```

<210> 42
<211> 101
<212> DNA
<213> Homo sapien

```

```

<400> 42
acttactgaa tttagttctg tgctcttcct tatttagtgt tgtatcataa atactttgat 60
gtttcaaaca ttctaaataa ataattttca gtgggttcat a 101

```

```

<210> 43
<211> 305
<212> DNA
<213> Homo sapien

```

```

<400> 43
acatctttgt tacagtctaa gatgtgttct taaatcacca ttccttcctg gtcctcacc 60
tccaggggtg tctcacactg taattagagc tattgaggag tctttacagc aaattaagat 120
tcagatgcct tgctaagtct agagttctag agttatgttt cagaaagtct aagaaacca 180
cctcttgaga ggtcagtaaa gaggacttaa tatttcatat ctacaaaatg accacaggat 240
tgatacaga acgagagtta tcttgataa ctcagagctg agtacctgcc cgggggcgc 300
tcgaa 305

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```

<210> 44
<211> 852
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1)... (852)
<223> n = A,T,C or G

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<400> 44

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acataaatat	cagagaaaag	tagtctttga	aatatttacg	tccaggagtt	ctttgtttct	60
gattatttgg	tgtgtgtttt	ggtttgtgtc	caaagtattg	gcagcttcag	ttttcatttt	120
ctctccatcc	tcgggcattc	ttcccaaatt	tatataccag	tcttcgtcca	tccacacgct	180
ccagaatttc	tctttttag	taatatctca	tagctcggtc	gagcttttca	taggtcatgc	240
tgctgttgtt	cttcttttta	ccccatagct	gagccactgc	ctctgatttc	aagaacctga	300
agacgccctc	agatcggtct	tcccatttta	ttaatcctgg	gttcttgtct	gggttcaaga	360
ggatgtcgcg	gatgaattcc	cataagttag	tccctctcgg	gttgtgcttt	ttggtgtggc	420
acttggcagg	ggggtcttgc	tcctttttca	tatcagggtga	ctctgcaaca	ggaagggtgac	480
tggtggttgt	catggagatc	tgagcccggc	agaaaagttt	gctgtccaac	aaatctactg	540
tgctaccata	gttggtgtca	tataaatagt	tctngtcttt	ccagggtgtc	atgatggaag	600
gctcagtttg	ttcagtcttg	acaatgacat	tgtgtgtgga	ctggaacagg	tcactactgc	660
actggccggt	ccacttcaga	tgctgcaagt	tgctgtagag	gagntgcccc	gccgtccctg	720
ccgcccgggt	gaactcctgc	aaactcatgc	tgcaaagggt	ctcgccgttg	atgtcgaact	780
cntggaaagg	gatacaattg	gcattccagct	ggttggtgtc	caggaggtga	tggagccact	840
cccacacctg	gt					852

<210> 45

<211> 234

<212> DNA

<213> Homo sapien

<400> 45

acaacagacc	cttgctcgct	aacgacctca	tgctcatcaa	gttggacgaa	tccgtgtccg	60
agtctgacac	catccggagc	atcagcattg	cttcgcagtg	ccctaccgcg	gggaactctt	120
gcctcgtttc	tggtctgggt	ctgctggcga	acggcagaat	gcctaccgtg	ctgcagtgcg	180
tgaacgtgtc	ggtggtgtct	gaggaggtct	gcagtaagct	ctatgacccg	ctgt	234

<210> 46

<211> 590

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (590)

<223> n = A,T,C or G

<400> 46

acttttttatt	taaatgttta	taaggcagat	ctatgagaat	gatagaaaac	atgggtgtgta	60
atttgatagc	aatatttttg	agattacaga	gttttagtaa	ttaccaatta	cacagttaaa	120
aagaagataa	tatattccaa	gcanatacaa	aatatctaat	gaaagatcaa	ggcaggaaaa	180
tgantataac	taattgacaa	tggaaaatca	attttaatgt	gaattgcaca	ttatccttta	240
aaagcttttc	aaanaaanaa	ttattgcagt	ctanttaatt	caaacagtg	ttaaattggtat	300
caggataaan	aactgaagg	canaaaaga	taattttcac	ttcatgtaac	ncacccanat	360
ttacaatggc	ttaaattgcan	ggaaaaagca	gtggaagtag	ggaagtantc	aaggcttttc	420
tggtctctaa	tctgccttac	tctttgggtg	tggtcttgat	cctctggaga	cagctgccag	480
ggctcctgtt	atatccacaa	tcccagcagc	aagatgaagg	gatgaaaaag	gacacatgct	540
gccttccttt	gaggagactt	catctcactg	gccaaacactc	agtcacatgt		590

<210> 47

<211> 774

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (774)

<223> n = A,T,C or G

<400> 47
 acaagggggc ataatgaagg agtgggggana gatttttaaag aaggaaaaaa aacgaggccc 60
 tgaacagaat tttcctgnac aacgggggctt caaaataatt ttcttgggga gggttcaagac 120
 gcttcactgc ttgaaactta aatggatgtg ggacanaatt ttctgtaatg accctgaggg 180
 cattacagac gggactctgg gaggaaggat aaacagaaag gggacaaaag ctaatcccaa 240
 aacatcaaag aaaggaagggt ggcgtcatac ctcccagcct acacagttct ccagggctct 300
 cctcatccct ggaggacgac agtggaggaa caactgacca tgtccccagg ctctgtgtg 360
 ctggctcctg gtcttcagcc cccagctctg gaagcccacc ctctgtgat cctgcgtggc 420
 ccacactcct tgaacacaca tccccagggtt atattcctgg acatggctga acctcctatt 480
 cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccactcac cctccaaacc 540
 acggcatggg aagcctttct gacttgcttg attactccag catcttgga caatccctga 600
 ttccccactc cttagaggca agataggggtg gttaagagta gggctggacc acttgagacc 660
 aggctgctgg cttcaaattt tggctcattt acgagctatg ggaccttggg caagtnatct 720
 tcacttctat gggcntcatt ttgttctacc tgcaaaatgg gggataataa tagt 774

<210> 48
 <211> 124
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(124)
 <223> n = A,T,C or G

<400> 48
 canaaattga aattttataa aaaggcattt ttctcttata tccataaaat gatataattt 60
 ttgcaantat anaaatgtgt cataaattat aatgttcctt aattacagct caacgcaact 120
 tggt 124

<210> 49
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 49
 gccgatgcta ctattttatt gcaggaggtg ggggtgtttt tattattctc tcaacagctt 60
 tgtggctaca ggtgggtgtct gactgcatna aaaanttttt tacgggtgat tgcaaaaatt 120
 ttagggcacc catatcccaa gcantgt 147

<210> 50
 <211> 107
 <212> DNA
 <213> Homo sapien

<400> 50
 acattaaatt aataaaagga ctgttgggggt tctgctaaaa cacatggctt gatatatgtc 60
 atggtttgag gttaggagga gttaggcata tgttttggga gaggggt 107

<210> 51
 <211> 204
 <212> DNA

<213> Homo sapien

<400> 51

gtcctaggaa gtctagggga cacacgactc tgggggtcacg gggccgacac acttgccacgg	60
cggaaggaa aggcagagaa gtgacaccgt cagggggaaa tgacagaaag gaaaatcaag	120
gccttgcaag gtcagaaagg ggactcaggg cttccaccac agccctgccc cacttggcca	180
cctccctttt gggaccagca atgt	204

<210> 52

<211> 491

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(491)

<223> n = A,T,C or G

<400> 52

acaaagataa catttatctt ataacaaaaa tttgatagtt ttaaagggtta gtattgtgta	60
gggtattttt caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaaca	120
ccatcagaca ggttttttaa aaacaacata ttacaaaatt agacaatcat ccttaaaaaa	180
aaaacttctt gtatcaattt cttttgttca aaatgactga cttaantatt tttaaatatt	240
tcanaaacac ttcctcaaaa attttcaana tggtagcttt canatgtnc ctcagtccca	300
atgttgctca gataaataaa tctcgtgaga acttaccacc caccacaagc tttctggggc	360
atgcaacagt gtcttttctt tnccttttct tttttttttt ttacaggcac agaaactcat	420
caattttatt tggataacaa agggctctca aatttatattg aaaaataaat ccaagttaat	480
atcactcttg t	491

<210> 53

<211> 484

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(484)

<223> n = A,T,C or G

<400> 53

acataattta gcagggctaa ttaccataag atgctattta ttaanaggtn tatgatctga	60
gtattaacag ttgctgaagt ttggtatttt tatgcagcat tttctttttg ctttgataac	120
actacagaac ccttaaggac actgaaaatt agtaagtaaa gttcagaaac attagctgct	180
caatcaaadc tctacataac actatagtaa ttaaaacggt aaaaaaaagt gttgaaatct	240
gcactagtat anaccgctcc tgtcaggata anactgcttt ggaacagaaa gggaaaaanc	300
agctttgant ttctttgtgc tgatangagg aaaggctgaa ttacctgtt gcctctccct	360
aatgattggc aggtcnggta aatnccaaaa catattccaa ctcaacactt cttttccncg	420
tancttgant ctgtgtatcc caggancagg cggtatggaat gggccagccc ncggtatgtc	480
cant	484

<210> 54

<211> 151

<212> DNA

<213> Homo sapien

<400> 54

actaaacctc gtgcttgta actccataca gaaaacgggtg ccatccctga acacggctgg	60
ccactgggta tactgctgac aaccgcaaca aaaaaaacac aaatccttgg cactggctag	120

tctatgtcct ctcaagtgcc tttttgtttg t 151

<210> 55
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 55
 acctggccttg tctccgggtg gttcccggtg cccccacgg tccccagaac ggacactttc 60
 gccctccagt ggatactga gccaaagtgg t 91

<210> 56
 <211> 133
 <212> DNA
 <213> Homo sapien

<400> 56
 ggccgatgtg cggttggtat atacaaatat gtcattttat gtaagggact tgagtatact 60
 tggatttttg gtatctgtgg gttgggggga cgggccagga accaatacc catggatacc 120
 aagggacaac tgt 133

<210> 57
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 57
 actctggaga acctgagccg ctgctccgcc tctgggatga ggtgatgcan gcngtggcgc 60
 gactgggagc tgagcccttc cctttgcgcc tgcctcagag gattgttgcc gacntgcana 120
 tctcantggg ctggatncat gcagggt 147

<210> 58
 <211> 198
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(198)
 <223> n = A,T,C or G

<400> 58
 acagggatat aggtttnaag ttattgtnat tgtaaaatac attgaatttt ctgtatactc 60
 tgattacata catttatcct ttaaaaaaga tgtaaatctt aatttttatg ccattctatta 120
 attaccaat gagttacctt gtaaatgaga agtcatgata gcactgaatt ttaactagtt 180
 ttgacttcta agtttggt 198

<210> 59
 <211> 330
 <212> DNA
 <213> Homo sapien

<400> 59

acaacaaatg ggttgtgagg aagtcttatac agcaaaaactg gtgatggcta ctgaaaagat	60
ccattgaaaa ttatcattaa tgatttttaa tgacaagtta tcaaaaactc actcaatttt	120
cacctgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa	180
tacagtcaat aaatgacaaa gccagggcct acaggtggtt tccagacttt ccagaccag	240
cagaaggaat ctattttatc acatggatct ccgtctgtgc tcaaaatacc taatgatatt	300
tttcgtcttt attggacttc tttgaagagt	330

<210> 60
 <211> 175
 <212> DNA
 <213> Homo sapien

<400> 60	
accgtgggtg ccttctacat tcttgacggc tccttcacca acatctggtt ctacttcggc	60
gtcgtgggtc ccttcctctt catcctcatc cagctgggtc tgctcatcga ctttgcgac	120
tcttgaacc agcgggtggc gggcaaggcc gaggagtgcg attcccgtgc ctggt	175

<210> 61
 <211> 154
 <212> DNA
 <213> Homo sapien

<400> 61	
acccacttt tctcctgtg agcagtctgg acttctcact gctacatgat gagggtgagt	60
ggttggtgct cttcaacagt atcctccctc ttcggatct gctgagccgg acagcagtgc	120
tggactgcac agccccggg ctcacattg ctgt	154

<210> 62
 <211> 30
 <212> DNA
 <213> Homo sapien

<400> 62	
cgctcgagcc ctatagtgag tegtattaga	30

<210> 63
 <211> 89
 <212> DNA
 <213> Homo sapien

<400> 63	
acaagtcatt tcagcaccct ttgctcttca aaactgacca tcttttatat ttaatgcttc	60
ctgtatgaat aaaaatggtt atgtcaagt	89

<210> 64
 <211> 97
 <212> DNA
 <213> Homo sapien

<400> 64	
accggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa ggttctgcag	60
aatcagtgc tccaggattg gtccttggat ctggggg	97

<210> 65
 <211> 377
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(377)

<223> n = A,T,C or G

<400> 65

acaacaanaa ntcccttctt taggccactg atggaaacct ggaacccctt tttgatggca	60
gcatggcgctc ctaggccttg acacagcggc tggggtttgg gctntcccaa accgcacacc	120
ccaaccctgg tctaccaca nttctggcta tgggctgtct ctgccactga acatcagggt	180
tcggtcataa natgaaatcc caanggggac agaggtcagt agaggaagct caatgagaaa	240
ggtgctgttt gctcagccag aaaacagctg cctggcattc gccgctgaac tatgaacccg	300
tgggggtgaa ctacccccan gaggaatcat gcctgggcga tgcaanggtg ccaacaggag	360
gggcggggagg agcatgt	377

<210> 66

<211> 305

<212> DNA

<213> Homo sapien

<400> 66

acgcctttcc ctcagaattc agggaagaga ctgtcgcttg ccttcctcgg ttgttgcggtg	60
agaacccgtg tgccccttcc caccatatac accctcgctc catctttgaa ctcaaacacg	120
aggaaactaac tgcaccctgg tectctcccc agtccccagt tcaccctcca tccctcacct	180
tcctccactc taaggggatc caacactgcc cagcacaggg gccctgaatt tatgtgggtt	240
ttatatattt tttaataaga tgcactttat gtcatttttt aataaagtct gaagaattac	300
tggtt	305

<210> 67

<211> 385

<212> DNA

<213> Homo sapien

<400> 67

actacacaca ctccacttgc ccttgtgaga cactttgtcc cagcacttta ggaatgctga	60
ggtcggacca gccacatctc atgtgcaaga ttgccagca gacatcaggt ctgagagttc	120
cccttttaaa aaaggggact tgcttaaaaa agaagtctag ccacgattgt gtagagcagc	180
tgtgctgtgc tggagattca cttttgagag agttctcctc tgagacctga tctttagagg	240
ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgcttg	300
cctctcccag ggccccagcc tggccacacc tgcttacagg gcactctcag atgccatac	360
catagtttct gtgctagtgg accgt	385

<210> 68

<211> 73

<212> DNA

<213> Homo sapien

<400> 68

acttaaccag atatattttt accccagatg gggatattct ttgtaaaaaa tgaaaataaa	60
gttttttttaa tgg	73

<210> 69

<211> 536

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(536)

<223> n = A,T,C or G

<400> 69

actagtccag	tgtggtggaa	ttccattgtg	ttgggggctc	tcaccctcct	ctcctgcagc	60
tccagctttg	tgctctgcct	ctgaggagac	catggcccag	catctgagta	ccctgctgct	120
cctgctggcc	accctagctg	tggccctggc	ctggagcccc	aaggaggagg	ataggataat	180
cccgggtggc	atctataacg	cagacctcaa	tgatgagtgg	gtacagcgctg	cccttcactt	240
cgccatcagc	gagtataaca	aggccaccaa	agatgactac	tacagacgtc	cgctgcgggg	300
actaagagcc	aggcaacaga	ccgttggggg	ggtgaattac	ttcttcgacg	tagagggtggg	360
ccgaaccata	tgtaccaagt	cccagcccaa	cttggacacc	tgtgccttcc	atgaacagcc	420
agaactgcag	aagaaacagt	tgtgctcttt	cgagatctac	gaagttccct	ggggagaaca	480
gaangtcctt	gggtgaaatc	cagggtgtcaa	gaaatcctan	ggatctgttg	ccaggc	536

<210> 70

<211> 477

<212> DNA

<213> Homo sapien

<400> 70

atgaccctta	acagggggcc	tctcagccct	cctaattgacc	tccggcctag	ccatgtgatt	60
tcacttccac	tccataacgc	tcctcatact	aggcctacta	accaacacac	taaccatata	120
ccaatgatgg	cgcgatgtaa	cacgagaaag	cacataccaa	ggccaccaca	caccacctgt	180
ccaaaaaggc	cttcgatacg	ggataatcct	atctattacc	tcagaagttt	ttttcttcgc	240
agggattttt	ctgagccttt	taccactcca	gcctagcccc	taccccccaa	ctaggagggc	300
actggccccc	aacaggcatc	accccgctaa	atcccctaga	agtcccactc	ctaaacacat	360
ccgtattact	cgcatcagga	gtatcaatca	cctgagctca	ccatagtcta	atagaaaaca	420
accgaaacca	aattattcaa	agcactgctt	attacaattt	tactgggtct	ctatttt	477

<210> 71

<211> 533

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(533)

<223> n = A,T,C or G

<400> 71

agagctatag	gtacagtgtg	atctcagctt	tgcaaacaca	ttttctacat	agatagtact	60
aggattaat	agatatgtaa	agaaagaaat	cacaccatta	ataatggtaa	gattgggtta	120
tgtgatttta	gtggtatttt	tggcaccctt	atatatgttt	tccaaacttt	cagcagtgat	180
attattttcca	taacttaaaa	agtgagtgtt	aaaaagaaaa	tctccagcaa	gcatctcatt	240
taaataaagg	tttgtcatct	ttaaaaatac	agcaatatgt	gactttttta	aaaagctgtc	300
aaatagggtg	gaccctacta	ataattatta	gaaatacatt	taaaaacatc	gagtacctca	360
agtcagtttg	ccttgaaaaa	tatcaaatat	aactcttaga	gaaatgtaca	taaaagaatg	420
cttcgtaatt	ttggagtang	aggttccctc	ctcaattttg	tattttttaa	aagtacatgg	480
taaaaaaaaa	aattcacaac	agtatataag	gctgtaaaaa	gaagaattct	gcc	533

<210> 72

<211> 511

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(511)

<223> n = A,T,C or G

<400> 72

tattacggaa	aaacacacca	cataattcaa	ctancaaaga	anactgcttc	agggcgtgta	60
aatgaaagg	cttccaggca	gttatctgat	taaagaacac	taaaagaggg	acaaggctaa	120
aagccgcagg	atgtctacac	tatancaggc	gctatttggg	ttggctggag	gagctgtgga	180
aaacatggan	agattggtgc	tgganatcgc	cgtggctatt	cctcattggt	attacanagt	240
gaggttctct	gtgtgcccac	tggtttgaaa	accgttctnc	aataatgata	gaatagtaca	300
cacatgagaa	ctgaaatggc	ccaaacccag	aaagaaagcc	caactagatc	ctcagaanac	360
gcttctaggg	acaataaccg	atgaagaaaa	gatggcctcc	ttgtgcccc	gtctgttatg	420
atttctctcc	attgcagcna	naaacccggt	cttctaagca	aacncaggtg	atgatggcna	480
aaatacaccc	cctcttgaag	naccnggagg	a			511

<210> 73

<211> 499

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(499)

<223> n = A,T,C or G

<400> 73

cagtgccagc	actggtgcc	gtaccagtag	caataacagt	gccagtgcc	gtgccagcac	60
cagtgggtggc	ttcagtgtg	gtgccagcct	gaccgccact	ctcacatttg	ggctcttcgc	120
tgcccttggt	ggagctggg	ccagcaccag	tgccagctct	ggtgcctgtg	gtttctccta	180
caagtgagat	tttagatatt	gttaatcctg	ccagtctttc	tcttcaagcc	aggggtgcac	240
ctcagaaacc	tactcaacac	agcactctag	gcagccacta	tcaatcaatt	gaagttgaca	300
ctctgcatta	aatctatttg	ccatttctga	aaaaaaaaaa	aaaaaaaggg	cggccgctcg	360
antctagagg	gcccgtttta	acccgctgat	cagcctcgac	tgtgccttct	anttgccagc	420
catctgttgt	ttgcccctcc	cccngtgcct	tccttgaccc	tggaaagtgc	cactcccaact	480
gtcctttcct	aantaaaaat					499

<210> 74

<211> 537

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(537)

<223> n = A,T,C or G

<400> 74

tttcatagga	gaacacactg	aggagatact	tgaagaattt	ggattcagcc	gcgaagagat	60
ttatcagctt	aactcagata	aatcattga	aagtaataag	gtaaaagcta	gtctctaact	120
tccaggccca	cggctcaagt	gaatttgaat	actgcattta	cagtgtagag	taacacataa	180
cattgtatgc	atggaaacat	ggaggaacag	tattacagtg	tcctaccact	ctaatacaaga	240
aaagaattac	agactctgat	tctacagtga	tgattgaatt	ctaaaaatgg	taatcattag	300
ggcttttgat	ttataaanact	ttgggtactt	atactaaatt	atggtagtta	tactgccttc	360
cagtttgctt	gatataattg	ttgatattaa	gattcttgac	ttataatttg	aatgggttct	420
actgaaaaan	gaatgatata	ttcttgaaga	catcgatata	catttattta	cactcttgat	480
tctacaatgt	agaaaatgaa	ggaaatgccc	caaattgtat	ggtgataaaa	gtcccgt	537

<210> 75

<211> 467

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(467)
 <223> n = A,T,C or G

<400> 75
 caaanacaat tgttcaaaag atgcaaatga tacactactg ctgcagctca caaacacctc 60
 tgcataattac acgtacctcc tectgtctct caagtagtgt ggtctatatt gccatcatca 120
 cctgctgtct gcttagaaga acggctttct gctgcaangg agagaaatca taacagacgg 180
 tggcacaagg aggccatctt ttctctcatcg gttattgtcc ctagaagcgt cttctgagga 240
 tctagttggg ctttctttct gggtttgggc catttcantt ctcatgtgtg tactattcta 300
 tcattattgt ataacggttt tcaaaccngt gggcacncag agaacctcac tctgtaataa 360
 caatgaggaa tagccacggg gatctccagc accaaatctc tccatgttnt tccagagctc 420
 ctccagccaa cccaaatagc cgctgctatn gtgtagaaca tccctgn 467

<210> 76
 <211> 400
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(400)
 <223> n = A,T,C or G

<400> 76
 aagctgacag cattcgggcc gagatgtctc gctccgtggc cttagctgtg ctgcgctac 60
 tctctctttc tggcctggag gctatccagc gtactccaaa gattcaggtt tactcacgtc 120
 atccagcaga gaatggaaa tcaaatttcc tgaattgcta tgtgtctggg ttcatccat 180
 ccgacattga agttgactta ctgaagaatg gagagagaat tgaaaaagt gagcattcag 240
 acttgtcttt cagcaaggac tgggtctttct atctcttgta ctacactgaa ttcaccccca 300
 ctgaaaaaga tgagtatgcc tgccgtgtga accatgtgac ttgtcacag cccaagatng 360
 tttagtggga tcganacatg taagcagcan catgggaggt 400

<210> 77
 <211> 248
 <212> DNA
 <213> Homo sapien

<400> 77
 ctggagtgcc ttggtgtttc aagcccctgc aggaagcaga atgcaccttc tgaggcacct 60
 ccagctgccc cggcggggga tgcgaggctc ggagcacctt tgcccggctg tgattgctgc 120
 caggcactgt tcatctcagc ttttctgtcc ctttgtctcc ggcaagcgt tctgctgaaa 180
 gttcatatct ggagcctgat gtcttaacga ataaaggctc catgctccac ccgaaaaaaa 240
 aaaaaaaa 248

<210> 78
 <211> 201
 <212> DNA
 <213> Homo sapien

<400> 78
 actagtccag tgtggtggaa ttccattgtg ttgggcccac cacaatggct acctttaaca 60
 tcacccagac cccgcctgc cgtgccccca cgctgctgct aacgacagta tgatgcttac 120
 tctgtactc ggaaactatt tttatgtaat taatgtatgc tttcttgttt ataatgcct 180
 gatttaaaaa aaaaaaaaaa a 201

<210> 79
 <211> 552
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(552)
 <223> n = A,T,C or G

<400> 79
 tcctttttgtt aggtttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg 60
 tttaggcagt gctagtaatt tcctcgtaat gattctgtta ttactttcct attctttatt 120
 cctcttttctt ctgaagatta atgaagttga aaattgaggt ggataaatac aaaaaggtag 180
 tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcaaaatt 240
 atgcaagtta gtaattactc agggttaact aaattacttt aatatgctgt tgaacctact 300
 ctgttccttg gctagaaaaa attataaaca ggactttgtt agtttgggaa gccaaattga 360
 taatattcta tgtttctaaaa gttgggctat acataaanta tnaagaaata tgggaatttta 420
 ttcccaggaa tatgggggttc atttatgaat antaccgagg anagaagttt tgantnaaac 480
 cngtttttgt taatacgtta atatgtcctn aatnaacaag gcntgactta tttccaaaaa 540
 aaaaaaaaaa aa 552

<210> 80
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 80
 acagggattt gagatgctaa ggccccagag atcgtttgat ccaaccctct tattttcaga 60
 ggggaaaatg gggcctagaa gttacagagc atctagctgg tgcgctggca cccctggcct 120
 cacacagact cccgagtagc tgggactaca ggcacacagt cactgaagca ggccctgttt 180
 gcaattcacg ttgccacctc caacttaaac attcttcata tgtgatgtcc ttagtcacta 240
 aggttaaact ttcccaccca gaaaaggcaa cttagataaa atcttagagt actttcatac 300
 tcttctaagt cctcttcag cctcactttg agtcctcctt gggggttgat aggaantntc 360
 tcttggtttt ctcaataaaa tctctatcca tctcatgttt aatttggtac gcntaaaaat 420
 gctgaaaaaa ttaaaatggt ctggtttcnc tttaaaaaaa aaaaaaaaaa aaaaaa 476

<210> 81
 <211> 232
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(232)
 <223> n = A,T,C or G

<400> 81
 ttttttttg tatgcctcnc ctgtggngtt attgttgctg ccacctgga ggagcccagt 60
 ttcttctgta tctttctttt ctgggggatc ttctggctc tgccctcca ttcccagcct 120
 ctcattccca ttgtgcactt ttgctagggt tggaggcgtt ttctggtag cccctcagag 180
 actcagtcag cggaataaag tcttaggggt ggggggtgtg gcaagccggc ct 232

<210> 82
 <211> 383
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1) ... (383)
 <223> n = A,T,C or G

<400> 82
 aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc 60
 agtaccagta ccaataacat gccagtgccg gtgccagcac cagtgggtggc ttcagtgtctg 120
 gtgccagcct gaccgccact ctcacatttg ggctcttcgc tggccttggg ggagctgggtg 180
 ccagcaccag tggcagctct ggtgcctgtg gtttctccta caagtgagat tttagatatt 240
 gttaatcctg ccagtctttc tcttcaagcc aggggtgcac ctcagaaacc tactcaacac 300
 agcactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360
 ccatttcaaa aaaaaaaaaa aaa 383

<210> 83
 <211> 494
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1) ... (494)
 <223> n = A,T,C or G

<400> 83
 accgaattgg gaccgctggc ttataagcga tcatgtcctc cagtattacc tcaacgagca 60
 gggagatcga gtctatacgc tgaagaaatt tgacccgatg ggacaacaga cctgctcagc 120
 ccattcctgct cggttctccc cagatgacaa atactctcga caccgaatca ccatcaagaa 180
 acgcttcaag gtgctcatga cccagcaacc gcgcctgtc ctctgagggt ccttaaactg 240
 atgtcttttc tgccacctgt taccctcgg agactccgta accaaactct tcggactgtg 300
 agccctgatg ccttttttgc agccatactc tttggentcc agtctctcgt ggcgattgat 360
 tatgcttgtg tgaggcaatc atggtggcat caccatnaa gggaacacat ttganttttt 420
 tttcncatat tttaaattac naccagaata nttcagaata aatgaattga aaaactctta 480
 aaaaaaaaaa aaaa 494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1) ... (380)
 <223> n = A,T,C or G

<400> 84
 gctggtagcc tatggcgtgg ccacggangg gctcctgagg cacgggacag tgacttccca 60
 agtatcctgc gccgcgtctt ctaccgtccc tacctgcaga tcttcgggca gattccccag 120
 gaggacatgg acgtggccct catggagcac agcaactgct cgtcggagcc cggcttcttg 180
 gcacaccctc ctggggccca ggccggccacc tgcgtctccc agtatgcaa ctggctgggtg 240
 gtgctgtctc tcgtcatctt cctgctcgtg gccaacatcc tgctgggtcac ttgctcattg 300
 ccatgttcag ttacacattc ggcaaagtac agggcaacag cnatctctac tgggaaggcc 360
 agcgttnccg cctcatccgg 380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(481)
 <223> n = A,T,C or G

<400> 85
 gagttagctc ctccacaacc ttgatgaggt cgtctgcagt ggcctctcgc ttcataccgc 60
 tnccatcgctc atactgtagg ttgcccacca cctcctgcat cttggggcgg ctaatatcca 120
 ggaaactctc aatcaagtca ccgtnatna aacctgtggc tggttctgtc ttcgcgtcgg 180
 tgtgaaagga tctccagaag gagtgcctga tcttccccac acttttgatg actttattga 240
 gtcgattctg catgtccagc aggaggttgt accagctctc tgacagtgag gtcaccagcc 300
 ctatcatgcc nttgaacgtg ccgaagaaca ccgagccttg tgtggggggg gnagtctcac 360
 ccagattctg cattaccaga nagccgtggc aaaaganatt gacaactcgc ccaggngaa 420
 aaagaacacc tcctggaagt gctngccgct cctcgtecnt tgggtggnngc gentnecctt 480
 t 481

<210> 86
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(472)
 <223> n = A,T,C or G

<400> 86
 aacatcttcc tgtataatgc tgtgtaatat cgatccgatn ttgtctgctg agaattcatt 60
 acttgaaaaa gcaacttnaa gcctggacac tgggtattaaa attcacaata tgcaacactt 120
 taaacagtgt gtcaactctgc tcccttactt tgtcatcacc agtctgggaa taagggtatg 180
 ccctattcac acctgttaaa agggcgctaa gcatttttga ttcaacatct ttttttttga 240
 cacaagtccg aaaaaagcaa aagtaaacag ttnttaattt gttagccaat tcactttctt 300
 catgggacag agccatttga tttaaaaagc aaattgcata atattgagct ttgggagctg 360
 atatntgagc ggaagantag cctttctact tcaccagaca caactccttt catattggga 420
 tgtnnacnaa agttatgtct cttacagatg ggatgctttt gtggcaattc tg 472

<210> 87
 <211> 413
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(413)
 <223> n = A,T,C or G

<400> 87
 agaaaccagt atctctnaaa acaacctctc ataccttggtg gacctaatTTt tgtgtgcgtg 60
 tgtgtgtgcg cgcataattat atagacaggc acatcttttt tacttttTgta aaagcttatg 120
 cctctttTggt atctatatct gtgaaagttt taatgatctg ccataatgtc ttggggacct 180
 ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt 240
 tttattcgac atgaaggaaa tttccagatn acaacactna caaactctcc cttgactagg 300

ggggacaaaag aaaagcanaa ctgaacatna gaaacaattn cctgggtgaga aattncataa 360
acagaaattg ggtngtatat tgaaanannng catcattnaa acgttttttt ttt 413

<210> 88

<211> 448

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(448)

<223> n = A,T,C or G

<400> 88

cgcgagcgggt cctctctatc tagctccagc ctctcgccctg cccactccc cgcgccccgc	60
gtcctagccn accatggccg ggccccctgcg cgccccgctg ctctgctgg ccatectggc	120
cgtggccccg gccgtgagcc ccgcggcccg ctccagtcgc ggcaagccgc cgcgccctggt	180
gggaggccca tggacccgc gtggaagaag aagggtgtgcg gcgtgcactg gactttgccg	240
tcggcnanta caacaaacc gcaacnactt ttaccnagcn cgcgctgcag gttgtgccgc	300
cccaancaaa ttgttactng gggtaantaa ttcttgggaag ttgaacctgg gccaaacnng	360
tttaccagaa ccnagccaat tngaacaatt nccccccat aacagcccct tttaaaaagg	420
gaancantcc tgntcttttc caaat	448

<210> 89

<211> 463

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(463)

<223> n = A,T,C or G

<400> 89

gaattttgtg cactggccac tgtgatggaa ccattgggcc aggatgcttt gagtttatca	60
gtagtgattc tgccaaagtt ggtgttgtaa catgagtag taaaatgtca aaaaattagc	120
agaggtctag gtctgcatat cagcagacag tttgtccgtg tattttgtag ccttgaagtt	180
ctcagtgaca agttntttct gatgcgaagt tctnattcca gtgttttagt cctttgcac	240
tttnatgtn agacttgcc ctntnaaatt gcttttgtnt tctgcaggta ctatctgtgg	300
tttaacaaaa tagaannact tctctgcttn gaanattga atatcttaca tctnaaaatn	360
aattctctcc ccatannaaa acccangccc ttggganaat ttgaaaaang gntccttcnn	420
aattcnnana anttcagntn tcatacaaca naacngganc ccc	463

<210> 90

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(400)

<223> n = A,T,C or G

<400> 90

agggattgaa ggtctntnt actgtcggac tgttcancca ccaactctac aagttgctgt	60
cttccactca ctgtctgtaa gcntnttaac ccagactgta tcttcataaa tagaacaat	120
tcttcaccag tcacatcttc taggacctt ttggattcag ttagtataag ctcttccact	180
tcctttgtta agacttcac tggtaaagtc ttaagttttg tagaaaggaa ttaattgct	240

cggttctctaa caatgtcctc tccttgaagt atttggtga acaacccacc tnaagtcct	300
ttgtgcatcc attttaata tacttaatag ggcattggtg cactagggtta aattctgcaa	360
gagtcacatg tctgcaaaag ttgcgttagt atatctgcca	400

<210> 91
 <211> 480
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(480)
 <223> n = A,T,C or G

<400> 91	
gagctcggat ccaataatct ttgtctgagg gcagcacaca tatncagtgc catggnaact	60
ggtctacccc acatgggagc agcatgccgt agntatataa ggctattccc tgagtcagac	120
atgcctcttt gactaccgtg tgccagtgtt ggtgattctc acacacctcc nncgctctt	180
tgtggaaaaa ctggcacttg nctggaacta gcaagacatc acttacaat tcacccacga	240
gacacttgaa aggtgtaaca aagcgactct tgcattgctt tttgtccctc cggcaccagt	300
tgtcaatact aaccgctggg tttgcctcca tcacatttgt gatctgtagc tctggataca	360
tctcctgaca gtactgaaga acttcttctt ttgtttcaaa agcaactctt ggtgcctgtt	420
ngatcagggt cccatttccc agtcggaatg ttcacatggc atatnttact tcccacaaa	480

<210> 92
 <211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 92	
atacagccca natcccacca cgaagatgcg cttgttgact gagaacctga tgcggctact	60
ggtcccgtg tagccccagc gactctccac ctgctggaag cgggtgatgc tgcactcctt	120
cccacgcagg cagcagcggg gccggtcaat gaactccact cgtggcttgg ggttgacggg	180
taantgcagg aagaggctga ccacctcgcg gtccaccagg atgcccagact gtgcgggacc	240
tgcagcgaaa ctctcgtatg gtcattgagc ggaagcgaat gangcccagg gccttgccca	300
gaaccttccg cctgttctct ggcgtcacct gcagctgctg ccgctnacac tcggcctcgg	360
accagcggac aaacggcggt gaacagcgc acctcacgga tgcccantgt gtcgcgtcc	420
aggaacggcn ccagcgtgtc caggtcaatg tcgggtgaanc ctccgcgggt aatggcg	477

<210> 93
 <211> 377
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(377)
 <223> n = A,T,C or G

<400> 93	
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agtcaggagca gcccagacc gctgccgccc gaagctaagc ctgcctctgg ccttcccctc	120
cgctcaatg cagaaccant agtgggagca ctgtgttag agttaagagt gaacactgtg	180

tgattttact	tggaatttc	ctctgttata	tagcttttcc	caatgcta	ttccaaacaa	240
caacaacaaa	ataacatgtt	tgctgttna	gttgataaaa	agtangtgat	tctgtatnta	300
aagaaaatat	tactgttaca	tatactgctt	gcaanttctg	tatttattgg	tnctctggaa	360
ataaatatat	tattaaa					377

<210> 94

<211> 495

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(495)

<223> n = A,T,C or G

<400> 94

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cgagctgang	cagatttccc	acagtgaccc	cagagccctg	ggctatagtc	tctgaccctt	120
ccaaggaaa	accaccttct	ggggacatgg	gctggagggc	aggacctaga	ggcaccaagg	180
gaaggcccca	ttccggggct	gttccccgag	gaggaaggga	aggggctctg	tgtgcccccc	240
acgaggaana	ggccctgant	cctgggatca	nacacccctt	cacgtgtatc	cccacacaaa	300
tgcaagctca	ccaaggtccc	ctctcagtc	cttccctaca	ccctgaacgg	ncactggccc	360
acacccaccc	agancancca	cccgccatgg	ggaatgttct	caaggaatcg	cngggcaacg	420
tggaactctng	tcccnnaagg	gggcagaatc	tccaatagan	gganngaacc	cttgctnana	480
aaaaaaaaana	aaaaa					495

<210> 95

<211> 472

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(472)

<223> n = A,T,C or G

<400> 95

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tagctgtttt	gagttgattc	gcaccactgc	accacaactc	aatatgaaaa	ctatttnact	180
tatttattat	cttgtgaaaa	gtatacaatg	aaaattttgt	tcatactgta	tttatcaagt	240
atgatgaaaa	gcaatagata	tatattcttt	tattatgttn	aattatgatt	gccattatta	300
atcggcaaaa	tgtggagtgt	atgttctttt	cacagtaata	tatgcctttt	gtaacttcac	360
ttggttattt	tattgtaaat	gaattacaaa	attcttaatt	taagaaaatg	gtangttata	420
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<210> 96

<211> 476

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(476)

<223> n = A,T,C or G

<400> 96

ctgaagcatt	tcttcaaact	tntctacttt	tgctattgat	acctgtagta	agttgacaat	60
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gtggtgaaat ttcaaaatta tatgtaactt ctactagttt tactttctcc cccaagtctt      120
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tgtgttagtc tcaattccta ccacactgag ggagcctccc aaatcactat attcttatct      360
gcaggctact ctccagaaaa acngacaggg caggcttgca tgaaaaagtn acatctgcgt      420
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<210> 97
<211> 479
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1) ... (479)
<223> n = A,T,C or G

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<400> 97
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caatcgcaaa tcaaaactca caagtgtccta tctgtttagt atttagtgta ataagactta      180
gattgtgctc cttcggatat gattgtttct canatcttgg gcaatnttcc ttagtcaaata      240
caggctacta gaattctggt attggatatn tgagagcatg aaatttttaa naatacactt      300
gtgattatna aattaatcac aaatttctact tatacctgct atcagcagct agaaaaacat      360
ntnnttttta natcaaagta ttttgtgttt ggaantgttn aaatgaaatc tgaatgtggg      420
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```

<210> 98
<211> 461
<212> DNA
<213> Homo sapien

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<400> 98
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tcaactccag ctggattatt ttggagcctg caaatctatt cctacttgta cggactttga      180
agtgattcag tttcctctac ggatgagaga ctggctcaag aatatcctca tgcagcttta      240
tgaagccact ctgaacacgc ttggttatcta gatgagaaca gagaaataaa gtcagaaaat      300
ttacctggag aaaagaggct ttggctgggg accatcccat tgaaccttct cttaaggact      360
ttaagaaaaa ctaccacatg ttgtgtatcc tgggtgccggc cgtttatgaa ctgaccaccc      420
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```

<210> 99
<211> 171
<212> DNA
<213> Homo sapien

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```

<400> 99
gtggccgcgc gcagggtgtt cctcgtagcg cagggccccc tcccttcccc aggcgtccct      60
cggcgctctc gcgggcccca ggaggagcgg ctggcgggtg gggggagtgt gacccaccct      120
cggtgagaaa agccttctct agcgatctga gaggcgtgcc ttgggggtac c      171

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<210> 100
<211> 269
<212> DNA
<213> Homo sapien

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<400> 100

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aaggctgagc	tgacgcgcga	gaggtcgtgt	cacgtcccac	gacctgacg	ccgtcgggga	180
cagccggaac	agagcccggg	gaagcgggag	gcctcgggga	gcccctcggg	aagggcggcc	240
cgagagatac	gcaggtgcag	gtggccgcc				269

<210> 101

<211> 405

<212> DNA

<213> Homo sapien

<400> 101

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ttgattgggt	tgtctttatg	ggggcggggt	ggggtagggg	aaacgaagca	aataacatgg	180
agtgggtgca	ccctccctgt	agaacctggt	tacaaagctt	ggggcagttc	acctgggtctg	240
tgaccgtcat	tttcttgaca	tcaatgttat	tagaagtcag	gatatctttt	agagagtcca	300
ctgttctgga	gggagattag	ggtttcttgc	caaatccaac	aaaatccact	gaaaaagtgtg	360
gatgatcagt	acgaataccg	aggcatattc	tcatatcggt	ggcca		405

<210> 102

<211> 470

<212> DNA

<213> Homo sapien

<400> 102

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tcaaaatcta	aattattcaa	attagccaaa	tccttaccaa	ataataccca	aaaatcaaaa	180
atatacttct	ttcagcaaac	ttgttacata	aattaaaaaa	atatatacgg	ctgggtgtttt	240
caaagtacaa	ttatcttaac	actgcaaaca	ttttaaggaa	ctaaaataaa	aaaaaacact	300
ccgcaaaggt	taaaggggaa	aacaaattct	tttacaacac	cattataaaa	atcatatctc	360
aaatcttagg	ggaatatata	cttcacacgg	gatcttaact	tttactcact	ttgtttattt	420
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<210> 103

<211> 581

<212> DNA

<213> Homo sapien

<400> 103

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taaatggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaatc	tgcttaaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaac	atccaaattc	240
atttttcttg	tctttaaaat	tatctaattc	ttccattttt	tcctattcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaca	ggaagagaaa	tggcacacaa	aacaaacatt	ttatattcat	atttctacct	420
acgttaataa	aatagcattt	tgtgaagcca	gctcaaaaga	aggcttagat	ccttttatgt	480
ccatttttagt	cactaaacga	tatcaaagtg	ccagaatgca	aaaggtttgt	gaacatttat	540
tcaaaagcta	atataagata	tttcacatac	tcacttttct	g		581

<210> 104

<211> 578

<212> DNA

<213> Homo sapien

<400> 104

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cactctctag	atagggcatg	aagaaaactc	atctttccag	ctttaaaata	acaatcaa	120
ctcttatgct	atatcatatt	ttaagttaaa	ctaattgagtc	actggcttat	cttctcctga	180
aggaaactcg	ttcattcttc	tcattcatat	agttatatca	agtactacct	tgcatattga	240
gagggttttt	ttctctattt	acacatatat	ttccatgtga	atttgatca	aacctttatt	300
ttcatgcaaa	ctagaaaata	atgtttcttt	tgcataagag	aagagaacaa	tatagcatta	360
caaaactgct	caaattgttt	gttaagtatt	ccattataat	tagttggcag	gagctaatac	420
aatcacatt	tacgacagca	ataataaaac	tgaagtacca	gttaaataatc	caaaataatt	480
aaaggaacat	ttttagcctg	ggtataatta	gctaattcac	tttacaagca	tttattagaa	540
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<210> 105

<211> 538

<212> DNA

<213> Homo sapien

<400> 105

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gtcttgaaca	ccaatattaa	tttgaggaaa	atacaccaa	atacatgaag	taaattattt	180
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ggcgagaaat	gaggaagaaa	agaaaaggat	tacgcatact	gttctttcta	tggaaggatt	480
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<210> 106

<211> 473

<212> DNA

<213> Homo sapien

<400> 106

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gcaaacgcta	attctcttct	ccatccccc	gtgatattgt	gtatatgtgt	gagttggtag	300
aatgcatcac	aatctacaat	caacagcaag	atgaagctag	gctgggcttt	cgggtgaaaat	360
agactgtgtc	tgtctgaatc	aatgatctg	acctatcctc	ggtggcaaga	actcttcgaa	420
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<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

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ccgctacgac	gtgagccgct	tgggcccggg	caagcgctcg	ctagtgtctg	acctgaagca	180
gccgcgggga	gccgcgctgc	tgcggcgctc	gtgcaagcgg	tcggatgtgc	tgctggagcc	240
cttcgcgcgc	ggtgtcatgg	agaaactcca	gctgggcccc	gagattctgc	agcgggaaaa	300
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tggtgagaat	ccgtatgccc	cgctgaatct	cctggctgac	tttgctgggtg	gtggccttat	480
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ctatacgact tacaggacag cagatgggga attcatggct gttggagcaa tagaacccca 720
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a

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<210> 108
 <211> 382
 <212> PRT
 <213> Homo sapien

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<400> 108
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Arg Val Asp Arg Pro Gly Ser Arg Tyr Asp Val Ser Arg Leu Gly Arg
35     40     45
Gly Lys Arg Ser Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
50     55     60
Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
65     70     75     80
Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
85     90     95
Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
100    105    110
Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
115    120    125
Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
130    135    140
Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
145    150    155    160
Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
165    170    175
Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
180    185    190
Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Glu Ala Pro Arg
195    200    205
Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
210    215    220
Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
225    230    235    240
Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
245    250    255

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Asn	Gln	Met	Ser	Met	Asp	Asp	Trp	Pro	Glu	Met	Lys	Lys	Lys	Phe	Ala
			260					265					270		
Asp	Val	Phe	Ala	Lys	Lys	Thr	Lys	Ala	Glu	Trp	Cys	Gln	Ile	Phe	Asp
		275					280					285			
Gly	Thr	Asp	Ala	Cys	Val	Thr	Pro	Val	Leu	Thr	Phe	Glu	Glu	Val	Val
	290					295					300				
His	His	Asp	His	Asn	Lys	Glu	Arg	Gly	Ser	Phe	Ile	Thr	Ser	Glu	Glu
305					310					315					320
Gln	Asp	Val	Ser	Pro	Arg	Pro	Ala	Pro	Leu	Leu	Leu	Asn	Thr	Pro	Ala
				325					330					335	
Ile	Pro	Ser	Phe	Lys	Arg	Asp	Pro	Phe	Ile	Gly	Glu	His	Thr	Glu	Glu
			340					345					350		
Ile	Leu	Glu	Glu	Phe	Gly	Phe	Ser	Arg	Glu	Glu	Ile	Tyr	Gln	Leu	Asn
	355					360					365				
Ser	Asp	Lys	Ile	Ile	Glu	Ser	Asn	Lys	Val	Lys	Ala	Ser	Leu		
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<210> 109

<211> 1524

<212> DNA

<213> Homo sapien

<400> 109

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cagtgcgacc	tagtggtctt	cacctgcttc	ctcctgggcg	tgggctgccg	gctgaccccg	180
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<210> 110

<211> 3410

<212> DNA

<213> Homo sapien

<400> 110

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<210> 111

<211> 1289

<212> DNA

<213> Homo sapien

<400> 111

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gtggagcctc agcagttccc tctttcagaa ctactgcga agagccctga acaggagcca      120
ccatgcagtg cttcagcttc attaaagacca tgatgatcct cttcaatttg ctcactcttc      180
tgtgtggtgc agccctgttg gcagtgggca tctgggtgtc aatcgatggg gcatcctttc      240
tgaagatctt cgggccaactg tgcgtccagt ccatgcagtt tgtcaacgtg ggctacttcc      300
tcategcagc cggcggttggt gtctttgtct ttggtttcct gggctgctat ggtgctaaga      360
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gaatggacct gccctttctg ctccagactt ggggctagat agggaccact ccttttagcg      1020
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gtagccagtt ctgttgccca ttccccagat ctattaaacc cttgatatgc cccctaggcc      1140
tagtggtgat ccagtgctc tactggggga tgagagaaag gcattttata gcttgggcac      1200
aagtgaatc agcagagcct ctgggtggat gtgtagaagg cacttcaaaa tgcataaacc      1260
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<210> 112

<211> 315

<212> PRT

<213> Homo sapien

<400> 112

```

Met Val Phe Thr Val Arg Leu Leu His Ile Phe Thr Val Asn Lys Gln
 1          5          10          15
Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys Asp Val Phe
 20          25          30
Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr Gly Val Ala
 35          40          45
Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser Ile Leu
 50          55          60
Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly Gln Ile Pro
 65          70          75          80
Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn Cys Ser Ser
 85          90          95
Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala Gly Thr Cys
100          105          110
Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu Leu Val Ile Phe
115          120          125
Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu Leu Ile Ala Met Phe
130          135          140
Ser Tyr Thr Phe Gly Lys Val Gln Gly Asn Ser Asp Leu Tyr Trp Lys
145          150          155          160
Ala Gln Arg Tyr Arg Leu Ile Arg Glu Phe His Ser Arg Pro Ala Leu
165          170          175
Ala Pro Pro Phe Ile Val Ile Ser His Leu Arg Leu Leu Leu Arg Gln
180          185          190
Leu Cys Arg Arg Pro Arg Ser Pro Gln Pro Ser Ser Pro Ala Leu Glu

```

```

      195              200              205
His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr
  210              215              220
Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp
  225              230              235              240
Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val
      245              250              255
Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg
      260              265              270
Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly
      275              280              285
Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly
      290              295              300
Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp
  305              310              315

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<210> 113
<211> 553
<212> PRT
<213> Homo sapien

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```

      <400> 113
Met Val Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala
  1              5              10              15
Gln Leu Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu
      20              25              30
Ala Ala Gly Ile Thr Tyr Val Pro Leu Leu Leu Glu Val Gly Val
      35              40              45
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
      50              55              60
Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly
      65              70              75              80
Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile
      85              90              95
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
      100              105              110
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
      115              120              125
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
      130              135              140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
      145              150              155              160
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
      165              170              175
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
      180              185              190
Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
      195              200              205
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly
      210              215              220
Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His
      225              230              235              240
Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu
      245              250              255
Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg
      260              265              270
Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
      275              280              285

```

Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
 290 295 300
 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 305 310 315 320
 Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
 325 330 335
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
 340 345 350
 Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
 355 360 365
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
 370 375 380
 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
 385 390 395 400
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
 405 410 415
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
 420 425 430
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
 435 440 445
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Ala Leu Cys Gly Ala Ser
 450 455 460
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
 465 470 475 480
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 485 490 495
 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
 500 505 510
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
 515 520 525
 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
 530 535 540
 Lys Ser Asp Leu Ala Lys Tyr Ser Ala
 545 550

<210> 114

<211> 241

<212> PRT

<213> Homo sapien

<400> 114

Met Gln Cys Phe Ser Phe Ile Lys Thr Met Met Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ile Phe Leu Cys Gly Ala Ala Leu Leu Ala Val Gly Ile Trp Val
 20 25 30
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
 35 40 45
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
 50 55 60
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
 65 70 75 80
 Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Ile Leu Leu Leu Ile
 85 90 95
 Phe Ile Ala Glu Val Ala Ala Ala Val Val Ala Leu Val Tyr Thr Thr
 100 105 110
 Met Ala Glu His Phe Leu Thr Leu Leu Val Val Pro Ala Ile Lys Lys
 115 120 125
 Asp Tyr Gly Ser Gln Glu Asp Phe Thr Gln Val Trp Asn Thr Thr Met

130		135		140
Lys Gly Leu Lys Cys Cys Gly Phe Thr Asn Tyr Thr Asp Phe Glu Asp				
145		150		155
Ser Pro Tyr Phe Lys Glu Asn Ser Ala Phe Pro Pro Phe Cys Cys Asn				160
	165		170	175
Asp Asn Val Thr Asn Thr Ala Asn Glu Thr Cys Thr Lys Gln Lys Ala				
	180		185	190
His Asp Gln Lys Val Glu Gly Cys Phe Asn Gln Leu Leu Tyr Asp Ile				
	195		200	205
Arg Thr Asn Ala Val Thr Val Gly Gly Val Ala Ala Gly Ile Gly Gly				
	210		215	220
Leu Glu Leu Ala Ala Met Ile Val Ser Met Tyr Leu Tyr Cys Asn Leu				
225		230		235
Gln				240

<210> 115
 <211> 366
 <212> DNA
 <213> Homo sapien

<400> 115

gctctttctc tcccctcctc tgaatttaat tctttcaact tgcaatttgc aaggattaca	60
catttcactg tgatgtatat tgtgttgcaa aaaaaaaaaa gtgtctttgt ttaaaattac	120
ttggtttggt aatccatctt gctttttccc cattggaact agtcattaac ccatctctga	180
actggtagaa aaacatctga agagctagtc taccagcatc tgacaggtga attggatggt	240
tctcagaacc atttcaccca gacagcctgt ttctatcctg tttaataaat tagtttgggt	300
tctctacatg cataacaaac cctgctccaa tctgtcacat aaaagtctgt gacttgaagt	360
ttagtc	366

<210> 116
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(282)
 <223> n = A,T,C or G

<400> 116

acaaagatga accatttcct atattatagc aaaattaaaa tctaccgta ttctaattatt	60
gagaaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa	120
agactttact attttcatat tttaagacac atgattttatc ctatttttagt aacctgggtc	180
atacgttaaa caaaggataa tgtgaacagc agagaggatt tgttggcaga aaatctatgt	240
tcaatctnga actatctana tcacagacat ttctattcct tt	282

<210> 117
 <211> 305
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(305)
 <223> n = A,T,C or G

<400> 117

```

acacatgtcg cttcactgcc ttcttagatg cttctgggtca acatanagga acagggacca      60
tatttatcct ccctcctgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa      120
aataaggcaa aatatatgaa acaacaggtc tcgagatatt ggaaatcagt caatgaagga      180
tactgatccc tgatcactgt cctaatgcag gatgtgggaa acagatgagg tcacctctgt      240
gactgccccca gcttactgcc tgtagagagt ttctangctg cagttcagac agggagaaat      300
tggtggt                                           305

```

```

<210> 118
<211> 71
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(71)
<223> n = A,T,C or G

```

```

<400> 118
accaaggtgt ntgaatctct gacgtgggga tctctgattc ccgcacaatc tgagtggaaa      60
aantcctggg t                                           71

```

```

<210> 119
<211> 212
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(212)
<223> n = A,T,C or G

```

```

<400> 119
actccggttg gtgtcagcag cacgtggcat tgaacatngc aatgtggagc ccaaaccaca      60
gaaaatgggg tgaaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac      120
agtaagctgg cccttctaataaaaagaaaat tgaaaggttt ctcactaanc ggaattaant      180
aatggantca aganactccc aggcctcagc gt                                           212

```

```

<210> 120
<211> 90
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(90)
<223> n = A,T,C or G

```

```

<400> 120
actcgttgca natcaggggc cccccagagt caccgttgca ggagtccttc tgggtcttgcc      60
ctccgccggc gcagaacatg ctgggggtggt                                           90

```

```

<210> 121
<211> 218
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature

```

<222> (1) ... (218)

<223> n = A,T,C or G

<400> 121

tgtancgtga	anacgacaga	naggggtgtc	aaaaatggag	aanccttgaa	gtcattttga	60
gaataagatt	tgctaaaaga	tttggggcta	aaacatgggt	attgggagac	atttctgaag	120
atatncangt	aaattangga	atgaattcat	ggttcttttg	ggaattcctt	tacgatngcc	180
agcatanact	tcatgtgggg	atancagcta	cccttgta			218

<210> 122

<211> 171

<212> DNA

<213> Homo sapien

<400> 122

taggggtgta	tgcaactgta	aggacaaaaa	ttgagactca	actggcttaa	ccaataaagg	60
catttgtag	ctcatggaac	aggaagtcgg	atgggtggggc	atcttcagt	ctgcatgagt	120
caccaccccg	gcgggggtcat	ctgtgccaca	gggccctgtt	gacagtgcgg	t	171

<210> 123

<211> 76

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (76)

<223> n = A,T,C or G

<400> 123

tgtagcgtga	agacnacaga	atgggtgtgtg	ctgtgctatc	caggaacaca	tttattatca	60
ttatcaanta	ttgtgt					76

<210> 124

<211> 131

<212> DNA

<213> Homo sapien

<400> 124

acctttcccc	aaggccaatg	tectgtgtgc	taactggccg	gctgcaggac	agctgcaatt	60
caatgtgctg	ggcatatgg	aggggaggag	actctaaaat	agccaatttt	attctcttgg	120
ttaagatttg	t					131

<210> 125

<211> 432

<212> DNA

<213> Homo sapien

<400> 125

actttatcta	ctggctatga	aatagatgg	ggaaaattgc	gttaccaact	ataccactgg	60
cttgaaaaag	aggtgatagc	tcttcagagg	acttgtgact	tttgctcaga	tgctgaagaa	120
ctacagtctg	catttggcag	aaatgaagat	gaatttggat	taaatgagga	tgctgaagat	180
ttgcctcacc	aaacaaaagt	gaaacaactg	agagaaaatt	ttcaggaaaa	aagacagtgg	240
ctcttgaagt	atcagtcact	tttgagaatg	tttcttagtt	actgcatact	tcatggatcc	300
catgggtggg	gtcttgcac	tgtaagaatg	gaattgattt	tgcttttgca	agaatctcag	360
caggaaacat	cagaaccact	atcttctagc	cctctgtcag	agcaaaccctc	agtgcctctc	420
ctctttgctt	gt					432

<210> 126
<211> 112
<212> DNA
<213> Homo sapien

<400> 126
acacaacttg aatagtaaaa tagaaactga gctgaaattt ctaattcact ttctaaccat 60
agtaagaatg atatttcccc ccagggatca ccaaatattt ataaaaattt gt 112

<210> 127
<211> 54
<212> DNA
<213> Homo sapien

<400> 127
accacgaaac cacaacaag atggaagcat caatccactt gccaaagcaca gcag 54

<210> 128
<211> 323
<212> DNA
<213> Homo sapien

<400> 128
acctcattag taattgtttt gttgtttcat ttttttctaa tgtctccctt ctaccagctc 60
acctgagata acagaatgaa aatggaagga cagccagatt tctcctttgc tctctgctca 120
ttctctctga agtctagggt acccattttg gggacccatt ataggcaata aacacagttc 180
ccaaagcatt tggacagttt cttgttggtg tttagaatgg ttttcctttt tcttagcctt 240
ttcctgcaaa aggtcactc agtcccttgc ttgtcagtg gactgggctc ccagggcct 300
aggtgcctt cttttccatg tcc 323

<210> 129
<211> 192
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(192)
<223> n = A,T,C or G

<400> 129
acatacatgt gtgtatattt ttaaatatca cttttgtatc actctgactt tttagcatac 60
tgaaaacaca ctaacataat ttntgtgaac catgatcaga tacaacccaa atcattcatc 120
tagcacattc atctgtgata naaagatagg tgagtttcat ttccttcacg ttggccaatg 180
gataaacaaa gt 192

<210> 130
<211> 362
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(362)
<223> n = A,T,C or G

<400> 130
ccctttttta tggaatgagt agactgtatg tttgaanatt tanccacaac ctctttgaca 60

tataatgacg	caacaaaaag	gtgctgttta	gtcctatggt	tcagtttatg	cccctgacaa	120
gtttccattg	tgttttgccg	atcttctggc	taatcgtggg	atcctccatg	ttattagtaa	180
ttctgtattc	cattttgtta	acgcctggta	gatgtaacct	gctangaggc	taactttata	240
cttattttaa	agctcttatt	ttgtgggtcat	taaaatggca	atztatgtgc	agcactttat	300
tgcagcagga	agcacgtgtg	ggttgggtgt	aaagctcttt	gctaattctta	aaaagtaatg	360
gg						362

<210> 131

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (332)

<223> n = A,T,C or G

<400> 131

ctttttgaaa	gatcgtgtcc	actcctgtgg	acatcttgtt	ttaatggagt	ttcccatgca	60
gtangactgg	tatggttgca	gctgtccaga	taaaaacatt	tgaagagctc	caaaatgaga	120
gttctcccag	gttcgccctg	ctgctccaag	tctcagcagc	agcctctttt	aggaggcatc	180
ttctgaacta	gattaaggca	gcttgtaa	ctgatgtgat	ttggtttatt	atccaactaa	240
cttccatctg	ttatcactgg	agaaagccca	gactccccc	gacnggtacg	gattgtgggc	300
atanaaggat	tgggtgaagc	tggcggtgtg	gt			332

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (322)

<223> n = A,T,C or G

<400> 132

acttttgcca	ttttgtatat	ataaacaatc	ttgggacatt	ctcctgaaaa	ctaggtgtcc	60
agtggctaag	agaactcgat	ttcaagcaat	tctgaaagga	aaaccagcat	gacacagaat	120
ctcaaattcc	caaacagggg	ctctgtggga	aaaatgaggg	aggacctttg	tatctcgggt	180
tttagcaagt	taaaatgaan	atgacaggaa	aggcttattt	atcaacaaag	agaagagttg	240
ggatgcttct	aaaaaaaaact	ttggtagaga	aaataggaat	gctnaatcct	agggaagcct	300
gtaacaatct	acaattggtc	ca				322

<210> 133

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (278)

<223> n = A,T,C or G

<400> 133

acaagccttc	acaagtttaa	ctaaattggg	attaatcttt	ctgtanttat	ctgcataatt	60
cttggttttc	tttccatctg	gctcctgggt	tgacaatttg	tggaaacaac	tctatttgcta	120
ctatttataa	aaaatcacaa	atctttccct	ttaagctatg	ttnaattcaa	actattcctg	180
ctattcctgt	tttgtaaaag	aaattatatt	tttcaaaata	tgtntatttg	tttgatgggt	240

cccacgaaac actaataaaa accacagaga ccagcctg .

278

<210> 134
<211> 121
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(121)
<223> n = A,T,C or G

<400> 134
gtttanaaaa cttgttttagc tccatagagg aaagaatggt aaactttgta ttttaaaaca 60
tgattctctg aggttaaact tggttttcaa atgttatttt tacttgtatt ttgcttttgg 120
t 121

<210> 135
<211> 350
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(350)
<223> n = A,T,C or G

<400> 135
acttanaacc atgcctagca catcagaatc cctcaaagaa catcagtata atcctataacc 60
atancaagtg gtgactggtt aagcgtgcga caaaggctcag ctggcacatt acttgtgtgc 120
aaacttgata cttttgttct aagtaggaac tagtatacag tncctaggan tgggtactcca 180
gggtgcccc caactcctgc agcgcctcct ctgtgccagn ccctgnaagg aactttcgct 240
ccacctcaat caagccctgg gccatgctac ctgcaattgg ctgaacaaac gtttgctgag 300
ttcccaagga tgcaaagcct ggtgctcaac tctggggcg tcaactcagt 350

<210> 136
<211> 399
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(399)
<223> n = A,T,C or G

<400> 136
tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggccga ggccagggtt 60
gctgtgattg tatccgaata ntcctcgtga gaaaagataa tgagatgacg tgagcagcct 120
gcagacttgt gtctgccttc aanaagccag acaggaaggc cctgcctgcc ttggctctga 180
cctggcggcc agccagccag ccacaggtgg gcttcttcct tttgtggtga caacnccaag 240
aaaactgcag agggccaggg tcaggtgtna gtgggtangt gaccataaaa caccaggtgc 300
tcccaggaac ccgggcaaag gccatcccca cctacagcca gcatgcccac tggcgtgatg 360
ggtgcagang gatgaagcag ccagntgttc tgctgtggt 399

<210> 137
<211> 165
<212> DNA
<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(165)
 <223> n = A,T,C or G

<400> 137
 actggtgtgg tnggggggtga tgctgggtgg anaagttgan gtgacttcan gatggtgtgt 60
 ggaggaagtg tgtgaacgta gggatgtaga ngttttggcc gtgctaaatg agcttcggga 120
 ttggctggtc ccactgggtg tcactgtcat tgggtggggtt cctgt 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(338)
 <223> n = A,T,C or G

<400> 138
 actcactgga atgccacatt cacaacagaa tcagaggtct gtgaaaacat taatggctcc 60
 ttaactttctc cagtaagaat cagggacttg aaatggaaac gttaacagcc acatgcccac 120
 tgctgggcag tctcccatgc cttccacagt gaaagggctt gagaaaaatc acatccaatg 180
 tcatgtgttt ccagccacac caaaaggtgc ttgggggtgga gggctggggg catananggt 240
 cangcctcag gaagcctcaa gttccattca gctttgccac tgtacattcc ccatntttta 300
 aaaaactgat gccttttttt tttttttttg taaaattc 338

<210> 139
 <211> 382
 <212> DNA
 <213> Homo sapien

<400> 139
 gggaatcttg gtttttggca tctggtttgc ctatagccga ggccactttg acagaacaaa 60
 gaaagggact tcgagtaaga aggtgattta cagccagcct agtgcccgaa gtgaaggaga 120
 attcaaacag acctcgatc tcttgggtgt agcctggctg gctcaccgcc tatcatctgc 180
 atttgcttta ctcaggtgct accggactct ggcccctgat gtctgtagt ttacaggatg 240
 ccttatttgt cttctacacc ccacagggcc ccctacttct tcggatgtgt ttttaataat 300
 gtcagctatg tgccccatcc tccttcacgc cctccctccc tttcctacca ctgctgagtg 360
 gcctggaact tgtttaaagt gt 382

<210> 140
 <211> 200
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(200)
 <223> n = A,T,C or G

<400> 140
 accaaanctt ctttctgttg tgttngattt tactataggg gtttngcttn ttctaaanat 60
 acttttccatt taacancttt tgttaagtgt caggtgcac tttgctccat anaattattg 120
 ttttcacatt tcaacttgta tgtgtttgct tcttanagca ttgggtgaaat cacatatttt 180
 atattcagca taaaggagaa 200

<210> 141
 <211> 335
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(335)
 <223> n = A,T,C or G

<400> 141
 actttatttt caaaacactc atatgttgca aaaaacacat agaaaaataa agtttggtgg 60
 ggggtgctgac taaacttcaa gtcacagact tttatgtgac agattggagc agggtttggt 120
 atgcatgtag agaaccctaa ctaattttatt aaacaggata gaaacaggct gtctgggtga 180
 aatggttctg agaaccatcc aattcacctg tcagatgctg atanactagc tcttcagatg 240
 tttttctacc agttcagaga tnggttaatg actantttcca atgggggaaaa agcaagatgg 300
 attcacaac caagtaattt taaacaaaga cactt 335

<210> 142
 <211> 459
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(459)
 <223> n = A,T,C or G

<400> 142
 accagggttaa tattgccaca tatatccttt ccaattgagg gctaaacaga cgtgtattta 60
 ggggtgttta aagacaaccc agcttaatat caagagaaat tgtgaccttt catggagtat 120
 ctgatggaga aaacactgag ttttgacaaa tcttatttta ttcagatagc agtctgatca 180
 cacatgggtcc aacaacactc aaataataaa tcaaatatna tcagatgtta aagattggtc 240
 ttcaaacatc atagccaatg atgccccgct tgcctataat ctctccgaca taaaaccaca 300
 tcaacacctc agtggccacc aaaccattca gcacagcttc cttaactgtg agctgtttga 360
 agctaccagt ctgagcacta ttgactatnt ttttcangct ctgaatagct ctagggatct 420
 cagcangggg gggaggaacc agtcaacct tggcgctant 459

<210> 143
 <211> 140
 <212> DNA
 <213> Homo sapien

<400> 143
 acatttcctt ccaccaagtc aggactcctg gcttctgtgg gagttcttat cacctgaggg 60
 aaatccaaac agtctctcct agaaaggaat agtgtcacca accccaccca tctccctgag 120
 accatccgac ttcctgtgt 140

<210> 144
 <211> 164
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(164)
 <223> n = A,T,C or G

<400> 144
 acttcagtaa caacatacaa taacaacatt aagtgtatat tgccatcttt gtcattttct 60
 atctatacca ctctcccttc tgaaaacaan aatcactanc caatcactta tacaaatttg 120
 aggcaattaa tccatatttg ttttcaataa ggaaaaaaag atgt 164

<210> 145
 <211> 303
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (303)
 <223> n = A,T,C or G

<400> 145
 acgtagacca tccaactttg tatttgtaat ggcaaacatc cagnagcaat tcctaaacaa 60
 actggagggt atttataccc aattatccca ttcattaaca tgccctcctc ctcaggctat 120
 gcaggacagc tatcataagt cggcccaggc atccagatac taccatttgt ataaacttca 180
 gtaggggagt ccatccaagt gacagggtcta atcaaaggag gaaatggaac ataagcccag 240
 tagtaaaatn ttgcttagct gaaacagcca caaaagactt accgccgtgg tgattaccat 300
 caa 303

<210> 146
 <211> 327
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (327)
 <223> n = A,T,C or G

<400> 146
 actgcagctc aattagaagt ggtctctgac ttctcatcanc ttctccctgg gctccatgac 60
 actggcctgg agtgactcat tgcctctggt gggtgagaga gtccttttgc caacaggcct 120
 ccaagtcagg gctgggattt gtttcccttc cacattctag caacaatatg ctggccactt 180
 cctgaacagg gaggggtggga ggagccagca tggaacaagc tgccacttcc taaagtagcc 240
 agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgctgca ggatggaatg 300
 taggggtgag ctgtgtgact ctatggt 327

<210> 147
 <211> 173
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (173)
 <223> n = A,T,C or G

<400> 147
 acattgtttt tttagataa agcattgana gagctctcct taacgtgaca caatggaagg 60
 actggaacac ataccacat ctttggtctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatatgtta tatattatcc agttccatgt ttatagccta gtt 173

<210> 148

<211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 148
 acaaccactt tatctcatcg aattttttaac ccaaactcac tcaactgtgcc tttctatcct 60
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact 120
 gccctactac ctgctgcaat aatcacattc ccttcctgtc ctgacctga agccattggg 180
 gtggctcctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgctcac 240
 nccancccac ctcaccgacc ccacccctctt acacagctac ctccttgtc tctaaccacca 300
 tagattatnt ccaaattcag tcaattaagt tactattaac actctaccg acatgtccag 360
 caccactggg aagccttctc cagccaacac acacacacac acacncacac acacacatat 420
 ccaggcacag gctacctcat cttcacaatc acccctttaa ttaccatgct atgggtgg 477

<210> 149
 <211> 207
 <212> DNA
 <213> Homo sapien

<400> 149
 acagttgtat tataatatca agaaataaac ttgcaatgag agcatttaag agggaagaac 60
 taacgtatnt tagagagcca aggaagggtt ctgtggggag tgggatgtaa ggtggggcct 120
 gatgataaat aagagtcagc caggtaagtg ggtgggtgtg tatgggcaca gtgaagaaca 180
 ttccaggcag agggaacagc agtgaaa 207

<210> 150
 <211> 111
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(111)
 <223> n = A,T,C or G

<400> 150
 accttgattt cattgctgct ctgatggaaa cccaactatc taatttagct aaaacatggg 60
 cacttaaagt tggctcagtgt ttggacttgt taactantgg catctttggg t 111

<210> 151
 <211> 196
 <212> DNA
 <213> Homo sapien

<400> 151
 agcgcggcag gtcatatga acattccaga tacctatcat tactcgatgc tgttgataac 60
 agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaaaaccat 120
 ggataccaac cggaaaaccc ctatcccga cagcccactg tgggtcccccac tgtctacgag 180
 gtgcatccgg ctcagt 196

<210> 152
 <211> 132
 <212> DNA

<213> Homo sapien

<400> 152

acagcacttt caca	tgtaag aagg	gagaaa ttccta	aatg tagg	agaaag ataac	agaac	60
cttccccctt	tcattag	tggtgaa	acct gatg	ctttat	gttgacagga	120
atagaaccag						132

<210> 153

<211> 285

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(285)

<223> n = A,T,C or G

<400> 153

acaanaccca ngan	aggcca ctgg	ccgtgg tgtcat	ggcc tccaa	acatg aaag	tgtag	60
cttctgctct tatg	tctca tctg	acaact cttt	accatt tttat	cctcg ctcag	cagga	120
gcacatcaat aaag	tccaaa gtct	tggact tggc	ccttggc ttgg	aggaag tcat	caacac	180
cctggctagt gagg	gtgcgg cgcc	gctcct ggat	gacggc atct	gtgaag tctg	gcacca	240
gtctgcaggc cctg	tgggaag cgcc	gtccac acgg	agtnag gaatt			285

<210> 154

<211> 333

<212> DNA

<213> Homo sapien

<400> 154

accacagtcc tg	tggggcca gggc	ttcatg accc	tttctg tgaaa	agcca tatt	atcacc	60
accccaaatt ttt	ccttaaa tatc	tttaac tgaag	gggtc agcct	ccttga ctg	caaagac	120
cctaagccgg tt	acacagct aact	cccact ggcc	cctgatt tgtg	aaattg ctg	ctgcctg	180
attggcacag gag	tgcgaagg tgtt	cagctc ccct	cctccg tgga	acgaga ctct	gatttg	240
agtttcacaa att	ctcgggc cacct	cgtca ttgt	ctcctc gaaata	aaat ccgg	gagaatg	300
gtcaggcctg tct	catccat atgg	atcttc cgg				333

<210> 155

<211> 308

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(308)

<223> n = A,T,C or G

<400> 155

actggaaata ataaa	accca catc	acagtg ttgt	gtcaaa gatc	atcagg gcat	ggatgg	60
gaaagtgtt tggg	aactgt aaag	tgcta acac	atgata gatg	attttt gttat	aatat	120
ttgaatcacg gtg	catataa actc	tcctgc ctgt	ctctcc tggg	ccccag cccc	agcccc	180
atcacagctc actg	ctctgt tcat	ccaggg ccag	catgta gtgg	ctgatt cttct	tgggt	240
gcttttagcc tcca	naagtt tctc	tgaagc caacca	aaacc tctang	tgta aggc	atgctg	300
gccctggt						308

<210> 156

<211> 295

<212> DNA

<213> Homo sapien

<400> 156

accttgctcg	gtgcttgga	catattagga	actcaaaata	tgagatgata	acagtgccta	60
ttattgatta	ctgagagaac	tgtagacat	ttagttgaag	attttctaca	caggaactga	120
gaataggaga	ttatgtttgg	ccctcatatt	ctctcctatc	ctccttgcc	cattctatgt	180
ctaataatatt	ctcaatcaaa	taagggttagc	ataatcagga	aatcgaccaa	ataccaatat	240
aaaaccagat	gtctatcctt	aagattttca	aatagaaaac	aaattaacag	actat	295

<210> 157

<211> 126

<212> DNA

<213> Homo sapien

<400> 157

acaagtttaa	atagtgtgt	cactgtgcat	gtgctgaaat	gtgaaatcca	ccacatttct	60
gaagagcaaa	acaaattctg	tcatgtaatc	tctatcttgg	gtcgtgggta	tatctgtccc	120
cttagt						126

<210> 158

<211> 442

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(442)

<223> n = A,T,C or G

<400> 158

acccactgg	cttggaaca	cccatcctta	atacgatgat	ttttctgtcg	tgtgaaaatg	60
aanccagcag	gctgccccta	gtcagtcctt	ccttccagag	aaaaagagat	ttgagaaagt	120
gcctgggtaa	ttcaccatta	atttctctcc	ccaaactctc	tgagtcttcc	cttaatat	180
ctgggtggttc	tgaccaaagc	agggtcatgg	ttgttgagca	tttgggatcc	cagtgaagta	240
natgtttgta	gccttgcata	cttagccctt	cccacgcaca	aacggagtg	cagagtggtg	300
ccaaccctgt	tttcccagtc	cacgtagaca	gattcacagt	gcggaattct	ggaagctgga	360
nacagacggg	ctctttgcag	agccgggact	ctgagangga	catgagggcc	tctgcctctg	420
tggttcattct	ctgatgtcct	gt				442

<210> 159

<211> 498

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(498)

<223> n = A,T,C or G

<400> 159

acttccaggt	aacgttggtg	tttccgttga	gcctgaactg	atgggtgacg	ttgtaggttc	60
tccaacaaga	actgaggttg	cagagcgggt	agggaaagag	gctgttccag	ttgcacctgg	120
gctgctgtgg	actgttggtg	attctctcact	acggcccaag	gttgtggaac	tggcanaaag	180
gtgtgttggt	gganttgagc	tccggcggct	gtggtaggtt	gtgggctctt	caacaggggc	240
tgctgtgggtg	ccggggangtg	aangtggttg	gtcacttgag	cttgccagc	tctggaaagt	300
antanattct	tcctgaaggc	cagcgttggt	ggagctggca	ngggtcantg	ttgtgtgtaa	360
cgaaccagtg	ctgctgtggg	tgggtgtana	tcctccacaa	agcctgaagt	tatgggtgcn	420
tcaggtaana	atgtgggttc	agtgtccctg	ggcngctgtg	gaaggttgta	nattgtcacc	480

aagggaataa gctgtggt

498

<210> 160

<211> 380

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(380)

<223> n = A,T,C or G

<400> 160

acctgcatcc agcttccctg ccaaactcac aaggagacat caacctctag acagggaaac	60
agcttcagga tacttccagg agacagagcc accagcagca aaacaaatat tcccatgcct	120
ggagcatggc atagaggaag ctganaaatg tgggggtctga ggaagccatt tgagtctggc	180
cactagacat ctcatcagcc acttgtgtga agagatgccc catgacccca gatgcctctc	240
ccacccttac ctccatctca cacacttgag ctttccactc tgtataattc taacatcctg	300
gagaaaaatg gcagtttgac cgaacctgtt cacaacggta gaggctgatt tctaacgaaa	360
cttgtagaat gaagcctgga	380

<210> 161

<211> 114

<212> DNA

<213> Homo sapien

<400> 161

actccacatc ccctctgagc aggcggttgt cgttcaaggt gtatttggcc ttgcctgtca	60
cactgtccac tggccctta tccacttggc gcttaatccc tcgaaagagc atgt	114

<210> 162

<211> 177

<212> DNA

<213> Homo sapien

<400> 162

actttctgaa tcgaatcaaa tgatacttag ttagtcttta atatcctcat atatatcaaa	60
gttttactac tctgataatt ttgtaaacca ggtaaccaga acatccagtc atacagcttt	120
tggtgatata taacttggca ataaccagc ctggtgatac ataaaactac tcaactgt	177

<210> 163

<211> 137

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(137)

<223> n = A,T,C or G

<400> 163

catttataca gacaggcgtg aagacattca cgacaaaaac gcgaaattct atcccgtgac	60
canagaaggc agctacggct actcctacat cctggcgtgg gtggccttcg cctgcacctt	120
catcagcggc atgatgt	137

<210> 164

<211> 469

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (469)

<223> n = A,T,C or G

<400> 164

cttatcacia	tgaatgttct	cctgggcagc	gttgtgatct	ttgccacctt	cgtgacttta	60
tgcaatgcat	catgctat	cataccta	gagggagttc	caggagattc	aaccaggaaa	120
tgcatggatc	tcaaaggaaa	caaacaccca	ataaaactcg	agtggcagac	tgacaactgt	180
gagacatgca	cttgctacga	aacagaaatt	tcatgttgca	cccttgtttc	tacacctgtg	240
ggttatgaca	aagacaactg	ccaaagaatc	ttcaagaagg	aggactgcaa	gtatatcgtg	300
gtggagaaga	aggacccaaa	aaagacctgt	tctgtcagtg	aatggataat	ctaattgtgt	360
tctagtaggc	acagggctcc	caggccaggc	ctcattctcc	tctggcctct	aatagtcaat	420
gattgtgtag	ccatgcctat	cagtaaaaag	atntttgagc	aaacacttt		469

<210> 165

<211> 195

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (195)

<223> n = A,T,C or G

<400> 165

acagtttttt	atanatatcg	acattgccgg	cacttggtgt	cagtttcata	aagctgggtg	60
atccgctgtc	atccactatt	ccttggttag	agtaaaaatt	attcttatag	cccatgtccc	120
tgcaggccgc	ccgccgtag	ttctcgttcc	agtcgtcttg	gcacacaggg	tgccaggact	180
tcctctgaga	tgagt					195

<210> 166

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (383)

<223> n = A,T,C or G

<400> 166

acatcttagt	agtgtggcac	atcagggggc	catcaggggc	acagtcactc	atagcctcgc	60
cgaggctcga	gtccacacca	ccggtgtagg	tgtgctcaat	cttgggcttg	gcgcccacct	120
ttggagaagg	gatatgctgc	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttgcagacc	agcctgagca	aggggaggat	gttcagcttc	agctcctcct	tcgtcagggtg	240
gatgccaacc	tcgtctangg	tccgtgggaa	gctgggtgtcc	acntcaccta	caacctgggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360
nggggccttt	ttggtgaact	ttc				383

<210> 167

<211> 247

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(247)
 <223> n = A,T,C or G

<400> 167
 acagagccag accttggcca taaatgaanc agagattaag actaaacccc aagtcganat 60
 tggagcagaa actggagcaa gaagtgggcc tggggctgaa gtagagacca aggccactgc 120
 tatanccata cacagagcca actctcaggc caaggcnatg gttggggcag anccagagac 180
 tcaatctgan tccaaagtgg tggctggaac actgggtcatg acanaggcag tgactctgac 240
 tgangtc 247

<210> 168
 <211> 273
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(273)
 <223> n = A,T,C or G

<400> 168
 acttctaagt tttctagaag tggaaggatt gtantcatcc tgaaaatggg tttacttcaa 60
 aatccctcan ccttgttctt cacnactgtc tatactgana gtgtcatgtt tccacaaagg 120
 gctgacacct gagcctgnat tttcactcat ccctgagaag ccctttccag taggggtgggc 180
 aattcccaac ttccttgcca caagcttccc aggctttctc ccctggaaaa ctccagcttg 240
 agtcccagat acactcatgg gctgccttgg gca 273

<210> 169
 <211> 431
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(431)
 <223> n = A,T,C or G

<400> 169
 acagccttgg cttccccaaa ctccacagtc tcagtgcaga aagatcatct tccagcagtc 60
 agctcagacc aggggtcaaag gatgtgacat caacagtttc tggtttcaga acagggttcta 120
 ctactgtcaa atgaccccc atacttcctc aaaggctgtg gtaagttttg cacagggtgag 180
 ggcagcagaa aggggggtant tactgatgga caccatcttc tctgtatact ccacactgac 240
 cttgccatgg gcaaaggccc ctaccacaaa aacaatagga tcaactgctgg gcaccagctc 300
 acgcacatca ctgacaaccg ggatggaaaa agaantgcc aatttcatac atccaactgg 360
 aaagtgatct gatactggat tcttaattac cttcaaaagc ttctgggggc catcagctgc 420
 tcgaacactg a 431

<210> 170
 <211> 266
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(266)
 <223> n = A,T,C or G

<400> 170

acctgtgggc	tggtgtgtta	tgctgtgcc	ggctgtgaa	agggagtcca	gaggtggagc	60
tcaaggagct	ctgcaggcat	tttgccaanc	ctctccanag	canaggggagc	aacctacact	120
ccccgctaga	aagacaccag	attggagctc	tgggaggggg	agttgggggtg	ggcatttgat	180
gtatacttgt	cacctgaatg	aangagccag	agaggaanga	gacgaanatg	anattggcct	240
tcaaagctag	gggtctggca	ggtgga				266

<210> 171

<211> 1248

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1248)

<223> n = A,T,C or G

<400> 171

ggcagccaaa	tcataaacgg	cgaggactgc	agccccgact	cgcagccctg	gcaggcggca	60
ctgggtcatgg	aaaacgaatt	gttctgtctg	ggcgtcctgg	tgcattccgca	gtgggtgctg	120
tcagccgcac	actgtttcca	gaagtgagtg	cagagctcct	acaccatcgg	gctgggcctg	180
cacagtcttg	aggccgacca	agagccaggg	agccagatgg	tggaggccag	cctctccgta	240
cggcacccag	agtacaacag	acccttgtct	gctaaccgacc	tcatgtctcat	caagttggac	300
gaatccgtgt	ccgagtctga	caccatccgg	agcatcagca	ttgtctcgca	gtgccctacc	360
gcgggggaact	cttgccctct	ttctggctgg	ggctgtgtgg	cgaacggcag	aatgcctacc	420
gtgctgcagt	gcgtgaacgt	gtcgggtggg	tctgaggagg	tctgcagtaa	gctctatgac	480
ccgctgtacc	acc'ccagcat	gttctgcgcc	ggcggagggg	aagaccagaa	ggactcctgc	540
aacggtgact	ctggggggcc	cctgatctgc	aacgggtact	tgcagggcct	tgtgtcttct	600
ggaaaagccc	cgtgtggcca	agttggcgtg	ccaggtgtct	acaccaacct	ctgcaaattc	660
actgagtggg	tagagaaaac	cgtccaggcc	agttaactct	ggggactggg	aacccatgaa	720
attgaccccc	aaatacatcc	tgcggaagga	attcaggaat	atctgttccc	agccccctct	780
ccctcaggcc	caggagtcca	ggcccccagc	ccctcctccc	tcaaaccaag	ggtacagatc	840
cccagccctc	cctccctcag	accaggaggt	ccagaccccc	cagccctccc	tccctcagac	900
ccaggagtcc	agccccctct	ccctcagacc	caggagtcca	gacccccccag	cccctcctcc	960
ctcagaccca	ggggtccagg	cccccaacct	ctcctccctc	agactcagag	gtccaagccc	1020
ccaaccntc	attccccaga	cccagaggtc	cagggtccag	cccctcntcc	ctcagaccca	1080
gcggtccaat	ggcaccctaga	ctntccctgt	acacagtgcc	cccttggtgg	acgttgaccc	1140
aaccttacca	gttggttttt	catttttngt	ccctttcccc	tagatccaga	aataaagttt	1200
aagagaagng	caaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa		1248

<210> 172

<211> 159

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(159)

<223> Xaa = Any Amino Acid

<400> 172

Met	Val	Glu	Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Pro
1				5				10					15		
L	u	Leu	Ala	Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val
			20					25					30		
Glu	Ser	Asp	Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr
			35					40					45		
Ala	Gly	Asn	Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Gly

50		55		60
Arg Met Pro Thr Val	Leu Gln Cys Val Asn Val	Ser Val Val Ser Glu		
65	70	75	80	
Glu Val Cys Ser Lys	Leu Tyr Asp Pro Leu Tyr	His Pro Ser Met Phe		
	85	90	95	
Cys Ala Gly Gly Gly	Gln Xaa Gln Xaa Asp	Ser Cys Asn Gly Asp Ser		
	100	105	110	
Gly Gly Pro Leu Ile	Cys Asn Gly Tyr Leu Gln	Gly Leu Val Ser Phe		
	115	120	125	
Gly Lys Ala Pro Cys	Gly Gln Val Gly Val Pro	Gly Val Tyr Thr Asn		
	130	135	140	
Leu Cys Lys Phe Thr	Glu Trp Ile Glu Lys Thr	Val Gln Ala Ser		
145	150	155		

<210> 173

<211> 1265

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1265)

<223> n = A,T,C or G

<400> 173

ggcagcccgc	actcgcagcc	ctggcaggcg	gcactgggtca	tggaaaacga	attgttctgc	60
tcgggagtc	tggtgcatcc	gcagtgggtg	ctgtcagccg	cacactgttt	ccagaactcc	120
tacaccatcg	ggctgggctt	gcacagtctt	gaggccgacc	aagagccagg	gagccagatg	180
gtggaggcca	gcctctccgt	acggcaccca	gagtacaaca	gacccttget	cgctaacgac	240
ctcatgctca	tcaagttgga	cgaatccgtg	tccgagtctg	acaccatccg	gagcatcagc	300
attgcttcgc	agtgccttac	cgcggggaac	tcttgccctg	tttctggctg	gggtctgctg	360
gcgaacggtg	agctcacggg	tgtgtgtctg	ccctcttcaa	ggaggtectc	tgcccagtcg	420
cgggggctga	cccagagctc	tgcgctccag	gcagaatgcc	taccgtgctg	cagtgcgtga	480
acgtgtcggg	ggtgtctgag	gaggtctgca	gtaagctcta	tgaccgctg	taccacccca	540
gcatgttctg	cgcgcggcga	gggcaagacc	agaaggactc	ctgcaacggt	gactctgggg	600
ggccccgtat	ctgcaacggg	tacttgcagg	gccttgtgtc	tttcggaaaa	gccccgtgtg	660
gccaaagtgg	cgtgccaggt	gtctacacca	acctctgcaa	attcactgag	tggatagaga	720
aaaccgtcca	ggccagttaa	ctctggggac	tgggaaacca	tgaaattgac	cccaaatac	780
atcctgcgga	aggaattcag	gaatatctgt	tcccagcccc	tcctccctca	ggcccaggag	840
tccaggcccc	cagccccctc	tccctcaaac	caagggtaca	gatccccagc	ccctcctccc	900
tcagaccag	gagtccagac	ccccagcccc	ctcctccctc	agaccagga	gtccagcccc	960
tcctccntca	gaccagggag	tccagacccc	ccagccccctc	ctccctcaga	cccaggggtt	1020
gaggccccca	acccctcctc	cttcagagtc	agagggtccaa	gcccccaacc	cctcgttccc	1080
cagaccacga	ggttnaggtc	ccagccccctc	ttccntcaga	cccagnggtc	caatgccacc	1140
tagattttcc	ctgnacacag	tgcccccttg	tggnangttg	acccaacctt	accagttggt	1200
ttttcatttt	tngtcctttt	cccctagatc	cagaaataaa	gtttaagaga	ngngcaaaaa	1260
aaaaa						1265

<210> 174

<211> 1459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1459)

<223> n = A,T,C or G

<400> 174

ggtcagccgc	acactgtttc	cagaagtgag	tgcagagctc	ctacaccatc	gggctggggcc	60
tgcacagtct	tgaggccgac	caagagccag	ggagccagat	gggtggaggcc	agcctctccg	120
tacggcacc	agagtacaac	agacccttgc	tgcctaacga	cctcatgctc	atcaagttag	180
acgaatccgt	gtccgagtct	gacaccatcc	ggagcatcag	cattgcttcg	cagtgcctta	240
ccgcggggaa	ctcttgccct	gtttctggct	ggggtctgct	ggcgaacggt	gagctcacgg	300
gtgtgtgtct	gccctcttca	aggaggtcct	ctgcccagtc	gcgggggctg	acccagagct	360
ctgcgtccca	ggcagaatgc	ctaccgtgct	gcagtgcgtg	aacgtgtcgg	tggtgtctga	420
ngaggctgct	antaagctct	atgaccgcgt	gtaccacccc	ancatgttct	gcgccggcgg	480
agggcaagac	cagaaggact	cctgcaacgt	gagagagggg	aaaggggagg	gcaggcgact	540
cagggaaagg	tggagaaggg	ggagacagag	acacacaggg	ccgcatggcg	agatgcagag	600
atggagagac	acacagggag	acagtgacaa	ctagagagag	aaactgagag	aaacagagaa	660
ataaacacag	gaataaagag	aagcaaagga	agagagaaaac	agaaacagac	atgggggaggc	720
agaaacacac	acacatagaa	atgcagttga	ccttccaaca	gcatggggcc	tgagggcggt	780
gacctccacc	caatagaaaa	tcctcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacca	ataacataaa	tagtcgattt	atgcatacgt	900
tttatgcatt	catgatatac	ctttgttggg	attttttgat	atttctaagc	tacacagttc	960
gtctgtgaat	tttttttaaat	tgttgcaact	ctcctaaaat	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtgg	acttgtgcat	tcaaaccagg	gttggttcaag	ggteaactgt	1080
gtacccagag	ggaaacagtg	acacagattc	atagaggtga	aacacgaaga	gaaacaggaa	1140
aatcaagac	tctacaaaga	ggctgggcag	gggtggctcat	gcctgtaatc	ccagcacttt	1200
gggaggcgag	gcaggcgagat	cacttgaggt	aaggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaaatacaaa	agtttagctg	atatggtggc	aggcgccctgt	1320
aatcccagct	acttgggagg	ctgaggcagg	agaattgctt	gaatatggga	ggcagaggtt	1380
gaagtgaagt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1167)

<223> n = A,T,C or G

<400> 175

gcgcagccct	ggcaggcggc	actggctcatg	gaaaacgaat	tgttctgctc	gggcgtcctg	60
gtgcatccgc	agtggtgtgt	gtcagccgca	cactgtttcc	agaactccta	caccatcggg	120
ctgggcctgc	acagtcttga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	180
ctctccgtac	ggcaccacaga	gtacaacaga	ctcttgctcg	ctaaccgacct	catgctcatc	240
aagttggacg	aatccgtgtc	cgagtctgac	accatccgga	gcatcagcat	tgcttcgcag	300
tgccctaccg	cggggaaactc	ttgcctcgtg	tctggctggg	gtctgctggc	gaacggcaga	360
atgcctaccg	tgctgcactg	cgtgaacgtg	tccgtgggtg	ctgaggangt	ctgcagtaag	420
ctctatgacc	cgtgtacca	ccccagcatg	ttctgcgccg	gcggagggca	agaccagaag	480
gactcctgca	acggtgactc	tgggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaaagcccc	gtgtggccaa	cttggcgtgc	caggtgtcta	caccaacctc	600
tgcaaattca	ctgagtggtg	agagaaaacc	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgaccccc	aatacatcct	gcggaangaa	ttcaggaata	tctgttccca	720
gcccctcctc	cctcaggccc	aggagtccag	gccccagccc	cctcctccct	caaaccaagg	780
gtacagatcc	ccagccccctc	ctccctcaga	cccaggagtc	cagaccccc	agccccctnt	840
ccntcagacc	caggagtcca	gcccctcctc	cntcagacgc	aggagtccag	accccccagc	900
ccntcntccg	tcagaccccag	gggtgcaggc	ccccaaacccc	tcntccntca	gagtcagagg	960
tccaagcccc	caacccctcg	ttccccagac	ccagaggtnc	aggteccagc	ccctcctccc	1020
tcagacccag	cgggtccaatg	ccacctagan	tntccctgta	cacagtgcgc	ccttgtggca	1080
ngttgaccca	accttaccag	ttggttttcc	attttttgctc	cctttccccc	agatccagaa	1140
ataaagtnta	agagaagcgc	aaaaaaa				1167

<210> 176
 <211> 205
 <212> PRT
 <213> Homo sapien
 <220>
 <221> VARIANT
 <222> (1)...(205)
 <223> Xaa = Any Amino Acid

<400> 176
 Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1 5 10 15
 Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20 25 30
 Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35 40 45
 Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
 50 55 60
 Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65 70 75 80
 Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85 90 95
 Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
 100 105 110
 Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
 115 120 125
 Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
 130 135 140
 Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
 145 150 155 160
 Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
 165 170 175
 Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
 180 185 190
 Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
 195 200 205

<210> 177
 <211> 1119
 <212> DNA
 <213> Homo sapien

<400> 177
 gcgcactcgc agccctggca ggcggcactg gtcattggaaa acgaattggt ctgctcgggc 60
 gtccctgggtgc atccgcagtg ggtgctgtca gccgcacact gtttccagaa ctctacacc 120
 atcgggctgg gctgcacag tcttgaggcc gaccaagagc cagggagcca gatgggtggag 180
 gccagcctct ccgtacggca cccagagtac aacagaccct tgctcgctaa cgacctcatg 240
 ctcactcaagt tggacgaatc cgtgtccgag tctgacacca tccggagcat cagcattgct 300
 tcgcagtgcc ctaccgctgg gaactcttgc ctggtttctg gctgggggtct gctggcgaaac 360
 gatgctgtga ttgccatcca gtcccagact gtgggaggct gggagtgtga gaagctttcc 420
 caaccctggc agggttgtac catttcggca acttccagtg caaggacgtc ctgctgcatc 480
 ctactgggt gctcactact gctcactgca tccccggaa cactgtgatc aactagccag 540
 caccatagtt ctccgaagtc agactatcat gattactgtg ttgactgtgc tgtctattgt 600
 actaaccatg ccgatgttta ggtgaaatta gcgtcacttg gcctcaacca tcttggtatc 660
 cagttatcct cactgaattg agatttcctg cttcagtgtc agccattccc acataatttc 720
 tgacctacag aggtgaggga tcatatagct cttcaaggat gctgggtactc cctcaciaaa 780

```

ttcattttctc ctgttgtagt gaaaggtgcg ccctctggag cctcccaggg tgggtgtgca      840
gggcacaatg atgaatgtat gatcgtgttc ccattaccca aagcctttaa atccctcatg      900
ctcagtacac cagggcaggt ctagcatttc ttcatttagt gtatgctgtc cattcatgca      960
accacctcag gactcctgga ttctctgcct agttgagctc ctgcatgctg cctccttggg     1020
gaggtgaggg agagggccca tggttcaatg ggatctgtgc agttgtaaca cattaggtgc     1080
ttaataaaca gaagctgtga tgttaaaaaa aaaaaaaaaa     1119

```

<210> 178
 <211> 164
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(164)
 <223> Xaa = Any Amino Acid

```

<400> 178
Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1          5          10          15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20          25          30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35          40          45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
 50          55          60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65          70          75          80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85          90          95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
100          105          110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
115          120          125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
130          135          140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
145          150          155          160
Pro Gly Thr Leu

```

<210> 179
 <211> 250
 <212> DNA
 <213> Homo sapien

```

<400> 179
ctggagtgcc ttggtgtttc aagcccctgc aggaagcaga atgcaccttc tgaggcacct      60
ccagctgccc cgggccgggg gatgcgaggc tcggagcacc cttgcccggc tgtgattgct     120
gccaggcact gttcatctca gcttttctgt ccctttgctc cgggcaagcg cttctgctga     180
aagttcatat ctggagcctg atgtcttaac gaataaaggt cccatgctcc acccgaaaaa     240
aaaaaaaaaa                                     250

```

<210> 180
 <211> 202
 <212> DNA
 <213> Homo sapien

<400> 180
 actagtccag tgtgggtggaa ttccattgtg ttggggcccaa cacaatgggt acctttaaca 60
 tcaccagac cccgcccctg cccgtgcccc acgctgctgc taacgacagt atgatgctta 120
 ctctgtact cggaactat ttttatgtaa ttaatgtatg ctttcttggt tataaatgcc 180
 tgatttaaaa aaaaaaaaaa aa 202

<210> 181
 <211> 558
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(558)
 <223> n = A,T,C or G

<400> 181
 tccytgtgkt naggtttkkg agacamccck agacctwaan ctgtgtcaca gacttcyngg 60
 aatggttagg cagtgttagt aatttcytcg taatgattct gttattactt tcctnattct 120
 ttattcctct ttcttctgaa gattaatgaa gttgaaaatt gaggtggata aatacaaaaa 180
 ggtagtgtga tagtataagt atctaagtgc agatgaaagt gtgttatata tatccattca 240
 aaattatgca agttagtaat tactcagggt taactaaatt actttaatat gctgttgaac 300
 ctactctgtt ccttggttag aaaaaattat aaacaggact ttgttagttt gggaagccaa 360
 attgataata ttctatgttc taaaagttgg gctatacata aattattaag aaatatggaw 420
 ttttattccc aggaatatgg kgttcatttt atgaatatta cscrggatag awgtwtgagt 480
 aaaaycagtt ttggtwaata ygtwaatatg tcmtaaataa acaakgcttt gactttattc 540
 caaaaaaaaa aaaaaaaaaa 558

<210> 182
 <211> 479
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(479)
 <223> n = A,T,C or G

<400> 182
 acagggwttk grggatgcta agsccccrga rwtggtttga tccaaccctg gcttwttttc 60
 agaggggaaa atggggccta gaagttacag mscatytagy tgggtgcgmg gcacccctgg 120
 cstcacacag astcccgagt agctgggact acaggcacac agtcactgaa gcaggccctg 180
 ttwgcaattc acgttgccac ctccaactta aacattcttc atatgtgatg tccttagtca 240
 ctaagggttaa actttccac ccagaaaagg caacttagat aaaatccttag agtactttca 300
 tactmttcta agtcctcttc cagcctcact kkgagtccm cytggggggt gataggaant 360
 ntctcttggc tttctcaata aartctctat ycatctcatg ttttaatttg tacgcata 420
 awtgstgara aaattaaaat gttctggtty mactttaaaa aaaaaaaaaa aaaaaaaaaa 479

<210> 183
 <211> 384
 <212> DNA
 <213> Homo sapien

<400> 183
 aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactggtgcc 60
 agtaccagta ccaataacag tgccagtgcc agtgccagca ccagtgggtg cttcagtgtc 120
 ggtgccagcc tgaccgccac tctcacattt gggctcttcg ctggccttgg tggagctggt 180
 gccagcacca gtggcagctc tgggtgcctgt ggtttctcct acaagtgaga ttttagatat 240

tgtaaactct	gccagtcttt	ctcttcaagc	caggggtgcat	cctcagaaac	ctactcaaca	300
cagcactcta	ggcagccact	atcaatcaat	tgaagttgac	actctgcatt	aratctattt	360
gccatttcaa	aaaaaaaaaa	aaaa				384

<210> 184
 <211> 496
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(496)
 <223> n = A,T,C or G

<400> 184						
accgaattgg	gaccgctggc	ttataagcga	tcatgttynt	ccrgtatcac	ctcaacgagc	60
aggagatcg	agtctatacg	ctgaagaaat	ttgacccgat	gggacaacag	acctgctcag	120
cccattcctgc	tcggttctcc	ccagatgaca	aatactctsg	acaccgaatc	accatcaaga	180
aacgcttcaa	ggtgctcatg	accagcaac	cgcgccctgt	cctctgaggg	tcctttaaac	240
tgatgtcttt	tctgccacct	gttacccttc	ggagactccg	taaccaaact	cttcggactg	300
tgagccctga	tgcccttttg	ccagccatac	tctttggcat	ccagtctctc	gtggcgattg	360
attatgcttg	tgtgaggcaa	tcatggtggc	atcacccata	aagggaacac	atttgacttt	420
ttttctcat	attttaaatt	actacmagaw	tattwmagaw	waaatgawtt	gaaaaactst	480
taaaaaaaaa	aaaaaa					496

<210> 185
 <211> 384
 <212> DNA
 <213> Homo sapien

<400> 185						
gctggtagcc	tatggcgkgg	cccacggagg	ggctcctgag	gccacggrac	agtgacttcc	60
caagtatcyt	gcgscgctc	ttctaccgtc	cctacctgca	gatcttcggg	cagattcccc	120
aggaggacat	ggacgtggcc	ctcatggagc	acagcaactg	ytctgctggg	ccgggcttct	180
gggcacaccc	tcctggggcc	caggcgggca	cctgcgtctc	ccagtatgcc	aactggctgg	240
tggtgctgct	cctcgtcatc	ttcctgctcg	tggccaacat	cctgctgggc	aacttgctca	300
ttgccatggt	cagttacaca	ttcggcaaa	tacagggcaa	cagcgatctc	tactgggaag	360
gcgcagcgtt	accgcctcat	cggg				384

<210> 186
 <211> 577
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(577)
 <223> n = A,T,C or G

<400> 186						
gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttgccacca	cytcctggca	tcttggggcg	gcntaatatt	120
ccaggaaact	ctcaatcaag	tcaccgtcga	tgaaacctgt	gggctgggtc	tgtcttccgc	180
tcggtgtgaa	aggatctccc	agaaggagtg	ctcgatcttc	cccacacttt	tgatgacttt	240
attgagtcga	ttctgcatgt	ccagcaggag	gttgtaccag	ctctctgaca	gtgaggtcac	300
cagccctatc	atgccgttga	mcgtgccgaa	garcccgag	ccttgtgtgg	gggkkgaggt	360
ctcaccacga	ttctgcatta	ccagagagcc	gtggcaaaa	acattgacaa	actcgcccag	420
gtggaaaaag	amcamctcct	ggargtgctn	gccgctcctc	gtcmgttggt	ggcagcgctw	480

tccttttgac acacaaacaa gttaaaggca ttttcagccc ccagaaantt gtcacatcc 540
 aagatntcgc acagcactna tccagttggg attaaat 577

<210> 187
 <211> 534
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(534)
 <223> n = A,T,C or G

<400> 187
 aacatcttcc tgtataatgc tgtgtaatat cgatccgatn ttgtctgstg agaaticatw 60
 actkggaaaa gmaacattaa agcctggaca ctggtattaa aattcacaat atgcaacact 120
 ttaaacagtg tgtcaatctg ctcccyynac tttgtcatca ccagtctggg aakaagggtg 180
 tgccctattc acacctgtta aaagggcgct aagcattttt gattcaacat cttttttttt 240
 gacacaagtc cgaaaaaagc aaaagtaaagc agttatyaat ttgttagcca attcactttc 300
 ttcattgggac agagccatyt gatttaaaaa gcaaattgca taatattgag ctttygggagc 360
 tgatatttga gcggaagagt agcctttcta cttcaccaga cacaactccc tttcatattg 420
 ggatgttnac naaagtwatg tctctwacag atgggatgct tttgtggcaa tttctgtctg 480
 aggatctccc agttttattta ccacttgcac aagaaggcgt tttcttctc aggc 534

<210> 188
 <211> 761
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(761)
 <223> n = A,T,C or G

<400> 188
 agaaaccagt atctctnaaa acaacctctc ataccttggt gacctaatth ttgtgtgcgtg 60
 ttgtgtgtgcg cgcataattat atagacaggc acatcttttt tacttttgta aaagcttatg 120
 cctctttggg atctatatct gtgaaagttt taatgatctg ccataatgct ttggggacct 180
 ttgtcttctg tgtaaaggt actagagaaa acacctatnt tatgagtcaa tctagttngt 240
 tttattcgac atgaaggaaa tttccagatn acaacactna caaactctcc ctkgackarg 300
 ggggacaaaag aaaagcaaaa ctgamcataa raaacaatwa cctggtgaga arttgcataa 360
 acagaaatwr ggtagtatat tgaarnacag catcattaaa rmgttwtktt wttctccctt 420
 gcaaaaaaca tgtacngact tcccgttgag taatgccaaag ttgttttttt tatnataaaa 480
 cttgcccttc attacatggt tnaaagtggg gtgggtgggccc aaaatattga aatgatggaa 540
 ctgactgata aagctgtaca aataagcagt gtgcctaaca agcaacacag taatgttgac 600
 atgcttaatt cacaaatgct aatttcatta taaatgtttg ctaaaataca ctttgaacta 660
 tttttctgtn ttcccagagc tgagatntta gattttatgt agtatnaagt gaaaaantac 720
 gaaaataata acattgaaga aaaananaaa aaanaaaaaa a 761

<210> 189
 <211> 482
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(482)
 <223> n = A,T,C or G

<400> 189

tttttttttt	tttgccgatn	ctactatttt	attgcaggan	gtgggggtgt	atgcaccgca	60
caccggggct	atnagaagca	agaaggaagg	agggagggca	cagccccttg	ctgagcaaca	120
aagccgcctg	ctgccttctc	tgtctgtctc	ctgggtgcagg	cacatgggga	gaccttcccc	180
aaggcagggg	ccaccagtcc	aggggtggga	atacaggggg	tgggangtgt	gcataagaag	240
tgataggcac	aggccacccg	gtacagaccc	ctcggtctct	gacaggtnga	tttcgaccag	300
gtcattgtgc	cctgcccagg	cacagcgtn	atctggaaaa	gacagaatgc	tttccttttc	360
aaatttggt	ngtcatngaa	ngggcanttt	tccaanttng	gctnggtctt	ggtacncttg	420
gttcggccca	gctccncgtc	caaaaantat	tcaccnct	ccnaattgct	tgcnngnccc	480
cc						482

<210> 190

<211> 471

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(471)

<223> n = A,T,C or G

<400> 190

tttttttttt	ttttaaaaca	gtttttcaca	acaaaattta	ttagaagaat	agtggttttg	60
aaaactctcg	catccagtga	gaactacat	acaccacatt	acagctngga	atgtnctcca	120
aatgtctggt	caaatagata	aatggaacca	ttcaatctta	cacatgcacg	aaagaacaag	180
cgcttttgac	atacaatgca	caaaaaaaaa	aggggggggg	gaccacatgg	attaaaattt	240
taagtactca	tcacatacat	taagacacag	ttctagtcca	gtcnaaaatc	agaactgcnt	300
tgaaaaattt	catgtatgca	atccaaccaa	agaacttnat	tggtgatcat	gantnctcta	360
ctacatcnac	cttgatcatt	gccaggaacn	aaaagttnaa	ancacncngt	acaaaaanaa	420
tctgtaattn	anttcaacct	ccgtacngaa	aaatnttnt	tatacactcc	c	471

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(402)

<223> n = A,T,C or G

<400> 191

gagggattga	aggtctgttc	tastgtcggm	ctgttcagcc	accaactcta	acaagttgct	60
gtcttccact	cactgtctgt	aagcttttta	accagacwg	tatcttcata	aatagaacaa	120
attcttcacc	agtcacatct	tctaggacct	ttttggattc	agttagtata	agctcttcca	180
cttcttttgt	taagacttca	tctggtaaa	tcttaagttt	tgtagaaagg	aattyaattg	240
ctcgttctct	aacaatgtcc	tctccttgaa	gtatttggtc	gaacaacca	cctaaagtcc	300
ctttgtgcat	ccattttaaa	tatacttaat	agggcattgk	tncactaggt	taaattctgc	360
aagagtcate	tgtctgcaaa	agttgcgtta	gtatatctgc	ca		402

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(601)

<223> n = A,T,C or G

<400> 192

gagctcggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catggnaact	60
ggctaccccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcytyttt	gaytaccgtg	tgccaagtgc	tggtgattct	yaacacacyt	ccatcccgyt	180
cttttgtgga	aaaactggca	cttktctgga	actagcarga	catcacttac	aaattcaccc	240
acgagacact	tgaaagggtg	aacaaagcga	ytcttgcatt	gctttttgtc	cctccggcac	300
cagttgtcaa	tactaaccgg	ctggtttgcc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	tcttttgttt	caaaagcarg	tcttggtgcc	420
tggtggatca	ggttcccatt	tcccagtcyg	aatgttcaca	tgccatattt	wacttcccac	480
aaaacattgc	gatttgaggc	tcagcaacag	caaatcctgt	tccggcattg	gctgcaagag	540
cctcgatgta	gccgggccag	gccaaggcag	gcgccgtgag	ccccaccagc	agcagaagca	600
g						601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(608)

<223> n = A,T,C or G

<400> 193

atacagccca	natcccacca	cgaagatgcg	cttggttgact	gagaacctga	tcgggtcact	60
ggctccgctg	tagccccagc	gactctccac	ctgctggaag	cggttgatgc	tgactcytt	120
cccaacgcag	gcagmagcgg	gsccgggtcaa	tgaactccay	tcgtggcttg	gggtkgacgg	180
tkaagtgcag	gaagaggctg	accacctcgc	gggccaccag	gatgcccgac	tgtgcgggac	240
ctgcagcgaa	actcctcgat	ggtcatgagc	gggaagcgaa	tgaggcccag	ggccttgccc	300
agaaccttcc	gcctgttctc	tggcgtcacc	tgccagctgct	gccgctgaca	ctcggcctcg	360
gaccagcgga	caaacggcrt	tgaacagccg	cacctcacgg	atgcccgatg	tgctgcgctc	420
caggammgsc	accagcgtgt	ccagggtcaat	gtcgggtgaag	ccctccgcgg	gtrattggcgt	480
gtgcagtggt	tttgctgatg	ttctccaggc	acaggctggc	cagctgcggt	tcacgaaga	540
gtcgcgctg	cgtgagcagc	atgaaggcgt	tgctggctcg	cagttcttct	tcagggaactc	600
cacgcaat						608

<210> 194

<211> 392

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 194

gaacggctgg	accttgccctc	gcatttgtgt	tgctggcagg	gaataccttg	gcaagcagyt	60
ccagtccgag	cagccccaga	ccgctgccgc	ccgaagctaa	gcctgcctct	ggccttcccc	120
tccgcctcaa	tgcaagaacca	gtagtgggag	cactgtgttt	agagttaaga	gtgaacactg	180
tttgatttta	cttgggaatt	tcctctgtta	tatagctttt	cccaatgcta	atttccaaac	240
aacaacaaca	aaataacatg	tttgccctgtt	aagttgtata	aaagtaggtg	attctgtatt	300
taaagaaaat	attactgtta	catatactgc	ttgcaatttc	tgtattttatt	gktnctstgg	360
aaataaatat	agttattaaa	ggttgtcant	cc			392

<210> 195
 <211> 502
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(502)
 <223> n = A,T,C or G

<400> 195
 ccsttkgagg ggkagggkyc cagttyccga gtggaagaaa caggccagga gaagtgcgtg 60
 ccgagctgag gcagatgttc ccacagtgc cccagagacc stgggstata gtytctgacc 120
 cctcncaagg aaagaccacs ttctggggac atgggctgga gggcaggacc tagaggcacc 180
 aagggaaggc cccattccgg ggstgttccc cgaggaggaa ggggaagggc tctgtgtgcc 240
 ccccasgagg aagagggcct gagtccctgg atcagacacc ccttcacgtg tatccccaca 300
 caaatgcaag ctcaccaagg tcccctctca gtccccttcc stacaccctg amcgggcact 360
 gscscacacc caccagagc acgccacccg ccatggggar tgtgctcaag gartcgngg 420
 gcarcgtgga catctngtcc cagaaggggg cagaatctcc aatagangga ctgarcmstt 480
 gctnanaaaa aaaaanaaaa aa 502

<210> 196
 <211> 665
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(665)
 <223> n = A,T,C or G

<400> 196
 ggttacttgg tttcattgcc accacttagt ggatgtcatt tagaaccatt ttgtctgctc 60
 cctctggaag ccttgccgag agcggacttt gtaattgttg gagaataact gctgaatttt 120
 wagctgtttk gagttgatts gcaccactgc acccacaact tcaatatgaa aacyawttga 180
 actwatttat tatcttgtga aaagtataac aatgaaaatt ttgttcatac tgtattkatc 240
 aagtatgatg aaaagcaawa gatatatatt cttttattat gttaaattat gattgccatt 300
 attaatcggc aaaatgtgga gtgtatgttc ttttcacagt aatatatgcc ttttgtaact 360
 tcacttggtt attttattgt aatgargtta caaaattctt aattttaagar aatggatgt 420
 watatttatt tcattaattt ctttcctkgt ttacgtwaat tttgaaaaga wtgcatgatt 480
 tcttgacaga aatcgatctt gatgctgtgg aagtagtttg acccacatcc ctatgagttt 540
 ttcttagaat gtataaagg ttaggcccat cnaacttcaa agaaaaaaat gaccacatac 600
 tttgcaatca ggctgaaatg tggcatgctn ttctaattcc aactttataa actagcaaan 660
 aagtg 665

<210> 197
 <211> 492
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(492)
 <223> n = A,T,C or G

<400> 197
 tttntttttt ttttttttgc aggaaggatt ccattttattg tggatgcatt ttcacaatat 60
 atgtttattg gagcgatcca ttatcagtga aaagtatcaa gtgtttataa natttttagg 120

```

aaggcagatt cacagaacat gctngtcngc ttgcagtttt acctcgtana gatnacagag      180
aattatagtc naaccagtaa acnaggaatt tacttttcaa aagattaaat ccaaactgaa      240
caaaattcta ccctgaaact tactccatcc aaatattgga ataanagtca gcagtgatac      300
attctcttct gaactttaga ttttctagaa aaatatgtaa tagtgatcag gaagagctct      360
tgttcaaaag tacaacnaag caatgttccc ttaccatagg ccttaattca aactttgatc      420
catttcactc ccatcacggg agtcaatgct acctggggaca cttgtatttt gttcatnctg      480
ancntggctt aa                                                                492

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```

<210> 198
<211> 478
<212> DNA
<213> Homo sapien

```

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<220>
<221> misc_feature
<222> (1) ... (478)
<223> n = A,T,C or G

```

```

<400> 198
ttnttttgn atttcantct gtannaanta ttttcattat gtttattana aaaatatnaa      60
tgtntccacn acaaatcatn ttacntnagt aagaggccan ctacattgta caacatacac      120
tgagtatatt ttgaaaagga caagttttaa gtanacncat attgccganc atancacatt      180
tatacatggc ttgattgata ttttagcacag canaaaactga gtgagttacc agaaanaaat      240
natatatgtc aatcngattt aagatacaaa acagatccta tggtagatan catcntgtag      300
gagttgtggc tttatgttta ctgaaagtca atgcagttcc tgtacaaaga gatggccgta      360
agcattctag tacctctact ccatgggttaa gaatcgtaca cttatgttta catatgtnta      420
gggtaagaat tgtgttaagt naanttatgg agagggtccan gagaaaaatt tgatncaa      478

```

```

<210> 199
<211> 482
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (482)
<223> n = A,T,C or G

```

```

<400> 199
agtgaattgt cctccaacaa aacccttga tcaagtttgt ggcactgaca atcagacctta      60
tgctagttcc tgtcatctat tcgctactaa atgcagactg gagggggacca aaaaggggca      120
tcaactccag ctggattatt ttggagcctg caaatctatt cctacttgta cggactttga      180
agtgattcag tttcctctac ggatgagaga ctggctcaag aatatcctca tgcagcttta      240
tgaagccnac tctgaacacg ctggttatct nagatgagaa ncagagaaat aaagtcnaga      300
aaatttacct ggangaagagg aggcittngg ctggggacca tccattgaa ctttctctta      360
anggacttta agaanaaact accacatgtn tgtngtatcc tgggtgccngg ccgtttantg      420
aacntngacn ncacccttnt ggaatanant cttgacngcn tcctgaactt gtcctctctg      480
ga                                                                482

```

```

<210> 200
<211> 270
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (270)
<223> n = A,T,C or G

```

<400> 200

cggccgcaag	tgcaactcca	gctggggccg	tgccgacgaa	gattctgcca	gcagttggtc	60
cgactgcgac	gacggcgggc	gcgacagtcg	caggtgcagc	gcgggcgcct	ggggtcttgc	120
aaggctgagc	tgacgccgca	gaggtcgtgt	cacgtcccac	gaccttgacg	ccgtcgggga	180
cagccggaac	agagcccggg	gaangcggga	ggcctcgggg	agccccctcg	gaagggcggc	240
ccgagagata	cgcaggtgca	ggtggccgcc				270

<210> 201

<211> 419

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(419)

<223> n = A,T,C or G

<400> 201

tttttttttt	ttttggaatc	tactgcgagc	acagcaggtc	agcaacaagt	ttatttttgca	60
gctagcaagg	taacagggtg	gggcatgggt	acatgttcag	gtcaacttcc	tttgctgtgg	120
ttgattgggt	tgtctttatg	ggggcggggt	ggggtagggg	aaancgaagc	anaantaaca	180
tggagtgggt	gcaccctccc	tgtagaacct	ggttacnaaa	gcttggggca	gttcacctgg	240
tctgtgaccg	tcatttttctt	gacatcaatg	ttattagaag	tcaggatata	ttttagagag	300
tccactgtnt	ctggaggagg	attagggttt	cttgccaana	tccaancaaa	atccacntga	360
aaaagttgga	tgatncangt	acngaatacc	ganggcatan	ttctcatant	cggtggcca	419

<210> 202

<211> 509

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(509)

<223> n = A,T,C or G

<400> 202

tttntttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tggaacttaa	tccattttta	tttcaaaatg	tctacaaant	ttnaatncnc	cattatacng	120
gtnattttnc	aaaatctaaa	nnttattcaa	atntnagcca	aantccttac	ncaaatnnaa	180
tacnncnaaa	aatcaaaaaat	atacntntct	ttcagcaaac	ttngttacat	aaattaaaaa	240
aatatatacg	gctgggtgtt	tcaaagtaca	attatcttaa	cactgcaaac	atnttttnaa	300
ggaactaaaa	taaaaaaaaa	cactnccgca	aaggttaaag	ggaacaacaa	attcntttta	360
caacancnnc	nattataaaa	atcatatctc	aaatcttagg	ggaatatata	cttcacacng	420
ggatcttaac	ttttactnca	ctttgtttat	ttttttanaa	ccattgtntt	gggccaaca	480
caatggnaat	nccnccnnc	tggaactagt				509

<210> 203

<211> 583

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(583)

<223> n = A,T,C or G

<400> 203

tttttttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaatc	tgccctaaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	attttttgact	cttgtaaaac	atccaaattc	240
atttttcttg	tctttaaaat	tatctaattc	ttccattttt	tccctattcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaca	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tatttctacc	420
tacgttaata	aaatagcatt	ttgtgaagcc	agctcaaaaag	aaggcttaga	tccttttatg	480
tccatttttag	tcactaaacg	atatcnaaag	tgccagaatg	caaaagggtt	gtgaacattt	540
attcaaaagc	taatataaga	tatttcacat	actcatcttt	ctg		583

<210> 204

<211> 589

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(589)

<223> n = A,T,C or G

<400> 204

ttttttttnt	tttttttttt	tttttttctc	ttcttttttt	ttganaatga	ggatcgagtt	60
tttcactctc	tagatagggc	atgaagaaaa	ctcatctttc	cagctttaaa	ataacaatca	120
aatctcttat	gctatatcat	atttttaagt	aaactaatga	gtcactggct	tatcttctcc	180
tgaaggaaat	ctgttcattc	ttctcattca	tatagttata	tcaagtacta	ccttgcatac	240
tgagagggtt	ttcttctcta	tttacacata	tatttccatg	tgaatttgta	tcaaaccctt	300
attttcatgc	aaactagaaa	ataatgtntt	cttttgcata	agagaagaga	acaatatnag	360
cattacaaaa	ctgctcaaat	tgtttgtaa	gnntatccat	tataattagt	tnggcaggag	420
ctaatacaaa	tcacattttac	ngacnagcaa	taataaaaact	gaagtaccag	ttaaatatcc	480
aaaataatta	aaggaacatt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ttattnagaa	tgaattcaca	tgttattatt	ccntagccca	acacaatgg		589

<210> 205

<211> 545

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(545)

<223> n = A,T,C or G

<400> 205

ttttnttttt	ttttttcagt	aataatcaga	acaatattta	tttttatatt	taaaattcat	60
agaaaagtgc	cttacattta	ataaaagtgt	gtttctcaaa	gtgatcagag	gaattagata	120
tngtcttgaa	caccaatatt	aatttgagga	aaatacacca	aaatacatta	agtaaattat	180
ttaagatcat	agagcttgta	agtgaaaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaattacta	tggaacttct	gctttaattt	tgtgatgaat	300
atgggggtgc	actggtaaac	caacacattc	tgaaggatac	attacttagt	gatagattct	360
tatgtacttt	gctanatnac	gtggatatga	gttgacaagt	ttctctttct	tcaatctttt	420
aaggggcnga	ngaaatgagg	aagaaaagaa	aaggattacg	catactgttc	tttctatngg	480
aaggattaga	tatgtttcct	ttgccaatat	taaaaaata	ataatgttta	ctactagtga	540
aaccc						545

<210> 206

<211> 487

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(487)

<223> n = A,T,C or G

<400> 206

tttttttttt	tttttttagtc	aagttttctna	tttttattat	aattaaagtc	ttgggtcattt	60
catttattag	ctctgcaact	tacatatatta	aattaaagaa	acgttnttag	acaactgtna	120
caatttataa	atgtaagggtg	ccattattga	gtanatatat	tcctccaaga	gtggatgtgt	180
cccttctccc	accaactaat	gaancagcaa	cattagttta	attttattag	tagatnatac	240
actgctgcaa	acgctaattc	tcttctccat	ccccatgtng	atattgtgta	tatgtgtgag	300
ttggtnagaa	tgcatacanca	atctnacaat	caacagcaag	atgaagctag	gcntgggctt	360
tcggtgaaaa	tagactgtgt	ctgtctgaat	caaattgatct	gacctatcct	cgggtggcaag	420
aactcttcga	accgcttcct	caaaggcngc	tgccacattt	gtggcntctn	ttgcacttgt	480
ttcaaaa						487

<210> 207

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(332)

<223> n = A,T,C or G

<400> 207

tgaattggct	aaaagactgc	atttttanaa	ctagcaactc	ttatttcttt	cctttaaaaa	60
tacatagcat	taaatacccaa	atcctattta	aagacctgac	agcttgagaa	ggtcactact	120
gcatttatag	gaccttctgg	tggttctgct	gttaacnttg	aantctgaca	atccttgana	180
atctttgcat	gcagaggagg	taaaagggtat	tggattttca	cagaggaana	acacagcgca	240
gaaatgaagg	ggccaggctt	actgagcttg	tccactggag	ggctcatggg	tgggacatgg	300
aaaagaaggc	agcctaggcc	ctggggagcc	ca			332

<210> 208

<211> 524

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(524)

<223> n = A,T,C or G

<400> 208

agggcgtggg	gcgaggggcg	ttactgtttt	gtctcagtaa	caataaatac	aaaaagactg	60
gttggtgtcc	ggccccatcc	aaccacgaag	ttgatttctc	ttgtgtgcag	agtgactgat	120
tttaaaggac	atggagcttg	tcacaatgtc	acaatgtcac	agtgtgaagg	gcacactcac	180
tcccgctgta	ttcacattta	gcaaccaaca	atagctcatg	agtccatact	tgtaaatact	240
tttggcagaa	tacttnttga	aacttgcaga	tgataactaa	gatccaagat	atttcccaaa	300
gtaaatagaa	gtgggtcata	atattaatta	cctgttcaca	tcagcttcca	tttacaagtc	360
atgagccag	acactgacat	caaactaagc	ccacttagac	tcctcaccac	cagtctgtcc	420
tgatcatcaga	caggaggctg	tcaccttgac	caaattctca	ccagtcaatc	atctatccaa	480
aaaccattac	ctgatccact	tccggtaatg	caccaccttg	gtga		524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209
 ggggtgaggaa atccagagtt gccatggaga aaattccagt gtcagcattc ttgctccttg 60
 tggccctctc ctacactctg gccagagata ccacagtcaa acctggagcc aaaaaggaca 120
 caaaggactc tcgacccaaa ctgccccaga ccctctcca 159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(256)
 <223> n = A,T,C or G

<400> 210
 actccctggc agacaaaggc agaggagaga gctctgttag ttctgtgttg ttgaactgcc 60
 actgaatttc tttccacttg gactattaca tgccanttga gggactaatg gaaaaacgta 120
 tggggagatt ttanccaatt tangtntgta aatggggaga ctggggcagg cgggagagat 180
 ttgcagggtg naaatggan ggctgggttg ttanatgaac aggacatag gaggtaggca 240
 ccaggatgct aaatca 256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(264)
 <223> n = A,T,C or G

<400> 211
 acattgtttt tttgagataa agcattgaga gagctctcct taacgtgaca caatggaagg 60
 actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gttaaggaga 180
 ggggagatac attcngaaag aggactgaaa gaaataactca agtnggaaaa cagaaaaaga 240
 aaaaaaggag caaatgagaa gcct 264

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(328)
 <223> n = A,T,C or G

<400> 212
 acccaaaaat ccaatgctga atatttggct tcattattcc canattcttt gattgtcaaa 60
 ggatttaatg ttgtctcagc ttgggcactt cagttaggac ctaaggatgc cagccggcag 120
 gtttatatat gcagcaacaa tattcaagcg cgacaacagg ttattgaact tgcccgccag 180

ttnaatttca	ttcccattga	cttgggatcc	ttatcatcag	ccagagagat	tgaaaattta	240
cccctacnac	tctttactct	ctgganaggg	ccagtgggtg	tagctataag	cttggccaca	300
tttttttttc	ctttattcct	ttgtcaga				328

<210> 213

<211> 250

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(250)

<223> n = A,T,C or G

<400> 213

acttatgagc	agagcgacat	atccnagtgt	agactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acatttcaat	tctccaaact	tcttcctcat	tccaagagtt	180
ttcaatat	tttgcac	gctgataanc	catgttaana	aacaaatata	tctctnacct	240
tctcatcggt						250

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(444)

<223> n = A,T,C or G

<400> 214

accagaatc	caatgctgaa	tatttggtt	cattattccc	agattctttg	attgtcaaag	60
gatttaagt	tgtctcagct	tgggcacttc	agttaggacc	taaggatgcc	agccggcagg	120
tttatatatg	cagcaacaat	attcaagcgc	gacaacaggt	tattgaactt	gcccggcagg	180
tgaatttc	tcccattgac	ttgggatcct	tatcatcagc	canagagatt	gaaaatttac	240
ccctacgact	ctttactctc	tggagagggc	cagtgggtgt	agctataagc	ttggccacat	300
ttttttttcc	tttattcctt	tgtcagagat	gcgattcatc	catatgctan	aaaccaacag	360
agtgaacttt	acaaaattcc	tataganatt	gtgaataaaa	ccttacctat	agttgccatt	420
actttgctct	ccctaataata	cctc				444

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(366)

<223> n = A,T,C or G

<400> 215

acttatgagc	agagcgacat	atccaagtgt	anactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acatttcaat	tctccaaact	tcttcctcat	tccaagagtt	180
ttcaatat	tttgcac	gctgataagc	catgttgaga	aacaaatata	tctctgacct	240
tctcatcggt	aagcagaggc	tgtaggcaac	atggaccata	gcgaanaaaa	aacttagtaa	300
tccaagctgt	tttctacact	gtaaccaggt	ttccaaccaa	ggtggaaatc	tcctatactt	360

ggtgcc

366

<210> 216
 <211> 260
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaactccac tgcangaggg agggccgggc caggagaatc tccgcttgct 60
 caagacaggg gcctaaggag ggtctccaca ctgctnntaa ggctnttnc atttttttat 120
 taataaaaag tnnaaaaggc ctcttctcaa cttttttccc ttnggctgga aaatttaaaa 180
 atcaaaaatt tctnaagtt ntcaagctat catatatact ntatcctgaa aaagcaacat 240
 aattcttctt tccctccttt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggaacgca tataattgta 60
 tcttgcttat aattttctat ttttaataagg aaatagcaaa ttgggggtggg gggaatgtag 120
 ggcatcttac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180
 atgaataatc tgtatgatta tatgtctcta gagtagattt ataattagcc acttaccta 240
 atatccttca tgcttgtaaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(205)
 <223> n = A,T,C or G

<400> 218
 accaaggtgg tgcattaccg gaantggatc aangacacca tegtggccaa cccctgagca 60
 cccctatcaa ctcccttttg tagtaaactt ggaaccttgg aaatgaccag gccaagactc 120
 aggccctccc agttctactg acctttgtcc ttangntna ngtccagggt tgctaggaaa 180
 anaaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219

tactgttttg tctcagtaac aataaatatac aaaagactgg ttgtgttccg gcccacatcca 60
accacgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tgga 114

<210> 220
<211> 93
<212> DNA
<213> Homo sapien

<400> 220
actagccagc acaaaaaggca gggtagcctg aattgctttc tgctctttac atttctttta 60
aaataagcat ttagtgctca gtccttactg agt 93

<210> 221
<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(167)
<223> n = A,T,C or G

<400> 221
actangtgca ggtgcgcaca aatatttgtc gatattccct tcattcttga ttccatgagg 60
tcttttgccc agcctgtggc tctactgtag taagtctctg ctgatgagga gccagnatgc 120
ccccactac cttccctgac gctccccana aatcacccaa cctctgt 167

<210> 222
<211> 351
<212> DNA
<213> Homo sapien

<400> 222
agggcgtggt ggcggagggcg gtactgacct cattagtagg aggatgcatt ctggcacccc 60
gttcttcacc tgtcccccaa tccttaaaag gccatactgc ataaagtcaa caacagataa 120
atgtttgctg aattaaagga tggatgaaaa aaattaataa tgaatttttg cataatccaa 180
ttttctcttt tatatttcta gaagaagttt ctttgagcct attagatccc gggaatcttt 240
taggtgagca tgattagaga gcttgtagggt tgcttttaca tatatctggc atatttgagt 300
ctcgtatcaa aacaatagat tggtaaagggt ggtattattg tattgataag t 351

<210> 223
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G

<400> 223
aaaacaaaca aacaaaaaaa acaattcttc attcagaaaa attatcttag ggactgatat 60
tggttaattat ggtcaattta atwrtrttkt ggggcatttc cttacattgt cttgacaaga 120
ttaaaatgtc tgtgccaaaa ttttgtattt tatttgagga cttcttatca aaagtaatgc 180
tgccaaagga agtctaagga attagtagtg ttcccmcac ttgtttgagg tgtgctattc 240
taaaagattt tgatttctcg gaatgacaat tatattttta ctttggtggg ggaaanagtt 300
ataggaccac agtcttcact tctgatactt gtaaattaat cttttattgc acttgttttg 360
accattaagc tatatgttta aaa 383

<210> 224
 <211> 320
 <212> DNA
 <213> Homo sapien

<400> 224
 cccctgaagg cttcttggtta gaaaatagta cagttacaac caataggaac aacaaaaaga 60
 aaaagtttgt gacattgtag tagggagtgt gtaccctta ctcccatca aaaaaaaat 120
 ggatacatgg ttaaaggata raagggcaat attttatcat atgttctaaa agagaaggaa 180
 gagaaaatac tactttctcr aaatggaagc ccttaaaggt gctttgatac tgaaggacac 240
 aaatgtggcc gtccatcttc ctttaragtt gcatgacttg gacacggtaa ctggtgcagt 300
 tttaractcm gcattgtgac 320

<210> 225
 <211> 1214
 <212> DNA
 <213> Homo sapien

<400> 225
 gaggactgca gcccgactc gcagccctgg caggcggcac tggcatgga aaacgaattg 60
 ttctgctcgg gcgtcctggg gcatccgcag tgggtgctgt cagccgcaca ctgtttccag 120
 aactcctaca ccatcgggct gggcctgcac agtcttgagg ccgaccaaga gccaggaggc 180
 cagatgggtg aggccagcct ctccgtacgg caccagagt acaacagacc ctgtctcgct 240
 aacgacctca tgctcatcaa gttggacgaa tccgtgtccg agtctgacac catccggagc 300
 atcagcattg cttcgcagtg ccctaccgcg gggaaactctt gcctcgtttc tggctggggg 360
 ctgctggcga acggcagaat gcctaccgtg ctgcagtgcg tgaacgtgtc ggtgggtgtc 420
 gaggaggtct gcagtaagct ctatgaccgg ctgtaccacc ccagcatgtt ctgcgccggc 480
 ggagggcaag accagaagga ctctgcaac ggtgactctg gggggcccct gatctgcaac 540
 gggtaacttg agggccttgt gtctttcgga aaagccccgt gtggccaagt tggcgtgcc 600
 ggtgtctaca ccaacctctg caaattcact gagtggatag agaaaaccgt ccaggccagt 660
 taactctggg gactgggaac ccatgaaatt gacccccaaa tacatcctgc ggaaggaatt 720
 caggaatatc tgttcccagc ccctcctccc tcaggcccag gagtccaggc cccagcccc 780
 tctcctcctca aaccaagggt acagatcccc agccccctct ccctcagacc caggagtcca 840
 gacccccag cccctcctcc ctccagacca ggagtccagc ccctcctccc tcagaccag 900
 gaggccagac cccccagccc ctctcctccc agaccagggg gtccaggccc ccaaccctc 960
 ctccctcaga ctccagaggtc caagccccca accctcctt cccagagccc agagggtccag 1020
 gtcccagccc ctctcctccc agaccagcg gtccaatgcc acctagactc tccctgtaca 1080
 cagtgtcccc ttgtggcacg ttgacccaac cttaccagtt ggtttttcat tttttgtccc 1140
 tttcccttag atccagaaat aaagtctaag agaagcgcaa aaaaaaaaaa aaaaaaaaaa 1200
 aaaaaaaaaa aaaa 1214

<210> 226
 <211> 119
 <212> DNA
 <213> Homo sapien

<400> 226
 acccagtatg tgcagggaga cggaacccca tgtgacagcc cactccacca gggttcccaa 60
 agaacctggc ccagtcataa tcattcatcc tgacagtggc aataatcacg ataaccagt 119

<210> 227
 <211> 818
 <212> DNA
 <213> Homo sapien

<400> 227
 acaattcata gggacgacca atgaggacag ggaatgaacc cggctctccc ccagccctga 60

tttttgctac	atatgggggtc	cctttttcatt	ctttgcaaaa	acactggggtt	ttctgagaac	120
acggacgggtt	cttagcacaa	tttgtgaaat	ctgtgtaraa	ccgggctttg	caggggagat	180
aattttcctc	ctctggagga	aaggtgggtga	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaagcca	cgctcggcct	tctctgaacc	aggatggaac	ggcagacccc	tgaaaacgaa	300
gcttgtcccc	ttcgaatcag	ccacttctga	gaacccccat	ctaacttctt	actggaaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaaagataa	cgtgacaact	accatctaga	420
ggaaagggtg	caccctcagc	agagaagccg	agagcttaac	tctggtcggt	tccagagaca	480
acctgctggc	tgtcttggga	tgcgccagc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcatgagagg	600
gacaggctct	gccctcaagc	cggctgaggg	cagcaaccac	tctcctcccc	tttctcacgc	660
aaagccattc	ccacaaatcc	agaccatacc	atgaagcaac	gagacccaaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acaccatgca	cacacacaag	780
gtccacttct	aggttttcag	cctagatggg	agtcgtgt			818

<210> 228

<211> 744

<212> DNA

<213> Homo sapien

<400> 228

actggagaca	ctgttgaact	tgatcaagac	ccagaccacc	ccaggtctcc	ttcgtgggat	60
gtcatgacgt	ttgacatacc	tttggaaacga	gcctcctcct	tggaagatgg	aagaccgtgt	120
tctgtggcga	cctggcctct	cctggcctgt	ttcttaagat	gcggagtcac	atttcaatgg	180
taggaaaagt	ggcttcgtaa	aatagaagag	cagtcactgt	ggaactacca	aatggcgaga	240
tgctcgggtc	acattgggggt	gctttgggat	aaaagattta	tgagccaact	attctctggc	300
accagattct	aggccagttt	gttcactga	agcttttccc	acagcagtc	acctctgcag	360
gctggcagct	gaatggcttg	cgggtggctc	tgtggcaaga	tcacactgag	atcgatgggt	420
gagaaggcta	ggatgcttgt	ctagtgttct	tagctgtcac	gttggctcct	tccaggttgg	480
ccagacgggtg	ttggccactc	ccttctaaaa	cacaggcgcc	ctcctgggtga	cagtgacccg	540
ccgtgggtatg	ttccagccca	ttccagcagt	cccagttatg	catttcaagt	ttggggtttg	600
ttcttttctg	taatgttctt	ctgtgttgtc	agctgtcttc	atttcctggg	ctaagcagca	660
ttgggagatg	tggaccagag	atccactcct	taagaaccag	tggcgaaaga	cactttcttt	720
cttcactctg	aagtagctgg	tggt				744

<210> 229

<211> 300

<212> DNA

<213> Homo sapien

<400> 229

cgagtctggg	ttttgtctat	aaagtttgat	ccctcctttt	ctcatccaaa	tcagtgtgaac	60
cattacacat	cgaaataaaa	gaaaggtggc	agacttgccc	aacgccaggc	tgacatgtgc	120
tgcagggttg	ttgtttttta	attattattg	ttagaaacgt	caccacacagt	ccctgttaat	180
ttgtatgtga	cagccaactc	tgagaaggtc	ctatttttcc	acctgcagag	gatccagtct	240
cactaggctc	ctccttgccc	tcacactgga	gtctccgcca	gtgtgggtgc	ccactgacat	300

<210> 230

<211> 301

<212> DNA

<213> Homo sapien

<400> 230

cagcagaaca	aatacaata	tgaagagtgc	aaagatctca	taaaatctat	gctgaggaat	60
gagcgacagt	tcaaggagga	gaagcttgca	gagcagctca	agcaagctga	ggagctcagg	120
caatataaag	tccctggttca	cactcaggaa	cgagagctga	cccagttaag	ggagaagttg	180
cggaaggga	gagatgcctc	cctctcattg	aatgagcatc	tccaggccct	cctcactccg	240
gatgaaccgg	acaagtccca	ggggcaggac	ctccaagaaa	cagacctcgg	ccgcgaccac	300
g						301

<210> 231
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 231
 gcaagcacgc tggcaaactc ctgtcaggtc agctccagag aagccattag tcatttttagc 60
 caggaactcc aagtcacacat ccttggcaac tggggacttg cgcagggttag ccttgaggat 120
 ggcaacacgg gacttctcat caggaagtgg gatgtagatg agctgatcaa gacggccagg 180
 tctgaggatg gcaggatcaa tgatgtcagg ccggttggtta ccgccaatga tgaacacatt 240
 tttttttgtg gacatgccat ccatttctgt caggatctgg ttgatgactc ggtcagcagc 300
 c 301

<210> 232
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 232
 agtaggtatt tcgtgagaag ttcaacacca aaactggaac atagttctcc ttcaagtgtt 60
 ggcgacagcg gggcttctctg attctggaat ataactttgt gtaaattaac agccacctat 120
 agaagagtcc atctgctgtg aaggagagac agagaactct gggttccgtc gtccgtgtcca 180
 cgtgctgtac caagtgtctg tgccagcctg ttacctgttc tcaactgaaa tctgggcta 240
 gctcttgtgt atcacttctg attctgacaa tcaatcaatc aatggcctag agcactgact 300
 g 301

<210> 233
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 233
 atgactgact tcccagtaag gctctctaa gggtaagtag gaggatccac aggatttgag 60
 atgctaaggc cccagagatc gtttgatcca accctcttat ttccagaggg gaaaatgggg 120
 cctagaagtt acagagcatc tagctgggtg gctggcacc cttggcctcac acagactccc 180
 gagtagctgg gactacaggc acacagtcac tgaagcaggc cctgttagca attctatgcg 240
 taaaaattaa catgagatga gtagagactt tattgagaaa gcaagagaaa atcctatcaa 300
 c 301

<210> 234
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 234
 aggtcctaca catcgagact catccatgat tgatatgaat ttaaaaatta caagcaaaga 60
 cattttattc atcatgatgc tttcttttgt ttcttctttt cgttttcttc tttttctttt 120
 tcaatttcag caacatactt ctcaatttct tcaggattta aaatcttgag ggattgatct 180
 cgctcatga cagcaagttc aatgtttttg ccacctgact gaaccacttc caggagtgcc 240
 ttgatcacca gcttaatggc cagatcatct gcttcaatgg cttcgtcagt atagttcttc 300
 t 301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235

tggggctgtg	catcaggcgg	gtttgagaaa	tattcaattc	tcagcagaag	ccagaatttg	60
aattccctca	tcttttaggg	aatcatttac	caggtttgga	gaggattcag	acagctcagg	120
tgctttcact	aatgtctctg	aacttctgtc	cctctttgtt	catggatagt	ccaataaata	180
atgttatctt	tgaactgatg	ctcataggag	agaatataag	aactctgagt	gatatcaaca	240
ttagggattc	aaagaaatat	tagattttaag	ctcacactgg	tca		283

<210> 236

<211> 301

<212> DNA

<213> Homo sapien

<400> 236

aggtcctcca	ccaactgcct	gaagcacggg	taaaattggg	aagaagtata	gtgcagcata	60
aatactttta	aatcgatcag	atttccctaa	cccacatgca	atcttcttca	ccagaagagg	120
tcggagcagc	atcattaata	ccaagcagaa	tgcgtaatag	ataaatacaa	tggtatatag	180
tgggtagacg	gcttcatgag	tacagtgtac	tgtggtagcg	taatctggac	ttggggtgta	240
aagcatcggtg	taccagtcag	aaagcatcaa	tactcgacat	gaacgaatat	aaagaacacc	300
a						301

<210> 237

<211> 301

<212> DNA

<213> Homo sapien

<400> 237

cagtggtagt	ggtgggtggac	gtggcggttg	tcgtgggtgcc	ttttttggtg	cccgtcacaa	60
actcaatttt	tggtcgctcc	tttttggect	tttccaattt	gtccatctca	atcttctggg	120
ccttggctaa	tgccatcatag	taggagtcct	cagaccagcc	atggggatca	aacatatcct	180
ttgggtagtt	ggtgccaaagc	tcgtcaatgg	cacagaatgg	atcagcttct	cgtaaatacta	240
gggttccgaa	attcttttctt	cctttgggata	atgtagttca	tatccattcc	ctcctttatc	300
t						301

<210> 238

<211> 301

<212> DNA

<213> Homo sapien

<400> 238

gggcagggttt	tttttttttt	ttttttgatg	gtgcagaccc	ttgctttatt	tgtctgactt	60
gttcacagtt	cagccccctg	ctcagaaaac	caacggggcca	gctaaggaga	ggaggaggga	120
ccttgagact	tccggagtcg	aggctctcca	gggttcccca	gcccataaat	cattttctgc	180
acccccctgcc	tggaagcag	ctccctgggg	gggtgggaatg	ggtgactaga	agggatttca	240
gtgtgggacc	cagggctctgt	tcttcacagt	aggaggtgga	agggatgact	aatttcttta	300
t						301

<210> 239

<211> 239

<212> DNA

<213> Homo sapien

<400> 239

ataagcagct	agggaattct	ttatttagta	atgtcctaac	ataaaagtgc	acataactgc	60
ttctgtcaaa	ccatgatact	gagctttgtg	acaaccacga	aataactaag	agaaggcaaa	120
cataatacct	tagagatcaa	gaaacattta	cacagttcaa	ctgttttaaa	atagctcaac	180
attcagccag	tgagtagagt	gtgaatgcc	gcatacacag	tatacaggtc	cttcaggga	239

<210> 240

<211> 300
 <212> DNA
 <213> Homo sapien

<400> 240
 ggtcctaatag aagcagcagc ttccacattt taacgcagggt ttacgggtgat actgtccttt 60
 gggatctgcc ctccagtggg acctttttaag gaagaagtgg gcccaagcta agttccacat 120
 gctgggtgag ccagatgact tctgttcctt ggtcactttc ttcaatgggg cgaatggggg 180
 ctgccagggt tttaaaatca tgcttcatct tgaagcacac ggtcacttca ccctcctcac 240
 gctgtgggtg tactttgatg aaaataccca ctttggttggc ctttctgaag ctataatgtc 300

<210> 241
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 241
 gaggtctggt gctgaggtct ctgggctagg aagaggaggt ctgtggagct ggaagccaga 60
 cctcttttga ggaaactcca gcagctatgt tgggtgtctct gagggaatgc aacaaggctg 120
 ctcttccatg tattggaaaa ctgcaaaactg gactcaactg gaaggaagtg ctgctgccag 180
 tgtgaagaac cagcctgagg tgacagaaac ggaagcaaac aggaacagcc agtcttttct 240
 tctctctct gtcatacggg ctctctcaag catcctttgt tgtcaggggc ctaaaaggga 300
 g 301

<210> 242
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 242
 ccgaggtcct gggatgcaac caatcactct gtttcacgtg acttttatca ccatacaatt 60
 tgtggcattt cctcattttc tacattgtag aatcaagagt gtaaataaat gtatatcgat 120
 gtcttcaaga atatatacatt cctttttcac tagaaccat tcaaaatata agtcaagaat 180
 cttaatatca acaaatatat caagcaaact ggaaggcaga ataactacca taatttagta 240
 taagtacca aagttttata aatcaaaagc cctaattgata accattttta gaattcaatc 300
 a 301

<210> 243
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 243
 aggtaagtcc cagtttgaag ctcaaaagat ctggtatgag cataggctca tcgacgacat 60
 ggtggcccaa gctatgaaat cagagggagg ctccatctgg gcctgtaaaa actatgatgg 120
 tgacgtgcag tcggactctg tggcccaagg gtatggctct ctcggcatga tgaccagcgt 180
 gctggtttgt ccagatggca agacagtaga agcagaggct gccacaggga ctgtaaccgg 240
 tcaactaccgc atgttcaga aaggacagga gacgtccacc aatcccattg cttccatttt 300
 t 301

<210> 244
 <211> 300
 <212> DNA
 <213> Homo sapien

<400> 244
 gctgggttgc aagaatgaaa tgaatgattc tacagctagg acttaacctt gaaatggaaa 60
 gtcattgcaat cccatttgcg ggtatgtgtc gtgcacatgc ctctgtagag agcagcattc 120

ccaggggacct	tggaaacagt	tgacactgta	aggtgcttgc	tccccaagac	acatcctaaa	180
aggtgttgta	atggtgaaaa	cgtcttcctt	ctttattgcc	ccttcttatt	tatgtgaaca	240
actgtttgtc	ttttgtgtat	ctttttttaa	ctgtaaagtt	caattgtgaa	aatgaatata	300

<210> 245

<211> 301

<212> DNA

<213> Homo sapien

<400> 245

gtctgagtat	ttaaaatggt	attgaaatta	tccccaacca	atgttagaaa	agaaagaggt	60
tatatactta	gataaaaaat	gaggtgaatt	actatccatt	gaaatcatgc	tcttagaatt	120
aaggccagga	gatattgtca	ttaatgtara	cttcaggaca	ctagagtata	gcagccctat	180
gttttcaaaag	agcagagatg	caattaaata	ttgttttagca	tcaaaaaggc	cactcaatac	240
agctaataaaa	atgaaagacc	taattttctaa	agcaattcct	tataattttac	aaagttttta	300
g						301

<210> 246

<211> 301

<212> DNA

<213> Homo sapien

<400> 246

ggtctgtcct	acaatgcctg	cttcttgaaa	gaagtcggca	ctttctagaa	tagctaaata	60
acctgggctt	attttaaaga	actatttgta	gtcagattg	gttttcctat	ggctaaaata	120
agtgtcttct	gtgaaaatta	aataaaacag	ttaattcaaa	gccttgatat	atgttaccac	180
taacaatcat	actaaatata	ttttgaagta	caaagtttga	catgctctaa	agtgacaacc	240
caaatgtgtc	ttacaaaaca	cgttcctaac	aaggtatgct	ttacactacc	aatgcagaaa	300
c						301

<210> 247

<211> 301

<212> DNA

<213> Homo sapien

<400> 247

aggtcctttg	gcaggggctca	tggatcagag	ctcaaactgg	agggaaaggc	atttcgggta	60
gcctaagagg	gcgactggcg	gcagcacaac	caaggaaggc	aaggttgttt	ccccacgct	120
gtgtcctgtg	ttcagggtg	acacacaatc	ctcatgggaa	caggatcacc	catgcgctgc	180
ccttgatgat	caaggttggg	gcttaagtgg	attaaggagg	gcaagttctg	ggttccttgc	240
cttttcaaac	catgaagtca	ggctctgtat	ccctcctttt	cctaactgat	attctaacta	300
a						301

<210> 248

<211> 301

<212> DNA

<213> Homo sapien

<400> 248

aggtccttgg	agatgccatt	tcagccgaag	gactcttctw	ttcggaagta	caccctcact	60
attaggaaga	ttcttagggg	taatttttct	gaggaaggag	aactagccaa	cttaagaatt	120
acaggaagaa	agtggtttgg	aagacagcca	aagaaataaa	agcagattaa	attgtatcag	180
gtacattcca	gcctgttggc	aactccataa	aaacatttca	gatttttaac	ccgaatttag	240
ctaattgagac	tggatttttg	ttttttatgt	tgtgtgtcgc	agagctaaaa	actcagttcc	300
c						301

<210> 249

<211> 301

<212> DNA

<213> Homo sapien

<400> 249

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gtccagagga agcacctggt gctgaactag gcttgccctg ctgtgaactt gcacttggag      60
ccctgacgct gctgttctcc ccgaaaaacc cgaccgacct ccgcatctc cgtcccgccc      120
ccagggagac acagcagtga ctcagagctg gtgcgacact gtgcctccct cctcaccgcc      180
catcgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggatggaaag      240
actgaatctt tgactcagaa ttgtttgctg aaaagaatga tgtgactttc ttagtcattt      300
a                                                                                   301

```

<210> 250

<211> 301

<212> DNA

<213> Homo sapien

<400> 250

```

ggctctgtgac aaggacttgc aggctgtggg aggcaagtga cccttaacac tacacttctc      60
cttatcttta ttggcttgat aaacataatt atttctaaca ctagcttatt tccagttgcc      120
cataagcaca tcagtacttt tctctggctg gaatagtaaa ctaaagtatg gtacatctac      180
ctaaaagact actatgtgga ataatacata ctaatgaagt attacatgat ttaaagacta      240
caataaaacc aaacatgctt ataacattaa gaaaaacaat aaagatacat gattgaaacc      300
a                                                                                   301

```

<210> 251

<211> 301

<212> DNA

<213> Homo sapien

<400> 251

```

gccgaggtcc tacatttggc ccagtttccc cctgcatect ctccagggcc cctgcctcat      60
agacaacctc atagagcata ggagaactgg ttgccctggg ggcaggggga ctgtctggat      120
ggcaggggtc ctcaaaaatg ccactgtcac tgccaggaaa tgcttctgag cagtacacct      180
cattgggatc aatgaaaagc ttcaagaaat cttcaggctc actctcttga aggcccggaa      240
cctctggagg ggggcagtgg aatcccagct ccaggacgga tcctgtcgaa aagatatcct      300
c                                                                                   301

```

<210> 252

<211> 301

<212> DNA

<213> Homo sapien

<400> 252

```

gcaaccaatc actctgtttc acgtgacttt tatcaccata caatttgtgg catttctca      60
ttttctacat tgtagaatca agagtgtaaa taaatgtata tcgatgtctt caagaatata      120
tcattccttt ttacttagga acccattcaa aatataagtc aagaatctta atatcaacaa      180
atatatcaag caaactggaa ggcagaataa ctaccataat ttagtataag tacccaaagt      240
tttataaatc aaaagcccta atgataacca tttttagaat tcaatcatca ctgtagaatc      300
a                                                                                   301

```

<210> 253

<211> 301

<212> DNA

<213> Homo sapien

<400> 253

```

ttccctaaga agatgttatt ttgttgggtt ttgttcccc tccatctoga ttctcgtacc      60
caactaaaaa aaaaaaataa agaaaaaatg tgctgcgttc tgaaaaataa ctccttagct      120

```

```

tggtctgatt gttttcagac cttaaaatat aaacttgttt cacaagcttt aatccatgtg      180
gatttttttt cttagagaac cacaaaacat aaaaggagca agtcggactg aatacctgtt      240
tccatagtgc ccacagggtg ttcctcacat tttctccata ggaaaatgct ttttcccaag      300
g                                                                                   301

```

```

<210> 254
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 254
cgctgcgcct ttcccttggg ggagggggcaa ggccagaggg ggtccaagtg cagcacgagg      60
aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaaatcccc      120
ccaaatctct tcatcttacc ctggtggact cctgactgta gaattttttg gttgaaacaa      180
gaaaaaaata aagcttttga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc      240
acttaaaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgcc      300
t                                                                                   301

```

```

<210> 255
<211> 302
<212> DNA
<213> Homo sapien

```

```

<400> 255
agcttttttt tttttttttt tttttttttt ttcattaaaa aatagtgtct tttattataa      60
attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagtt tgacttggat      120
tggtgatttt ttgagttctt caagcatctc ctaataccct caagggcctg agtagggggg      180
aggaaaaagg actggagggt gaatctttat aaaaaacaag agtgattgag gcagattgta      240
aacattatta aaaaacaaga aacaaacaaa aaaatagaga aaaaaaccac cccaacacac      300
aa                                                                                   302

```

```

<210> 256
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 256
gttccagaaa acattgaagg tggcttccca aagtctaact agggataccc cctctagcct      60
aggaccctcc tccccacacc tcaatccacc aaaccatcca taatgcaccc agataggccc      120
acccccaaaa gcctggacac cttgagcaca cagttatgac caggacagac tcatctctat      180
aggcaaatag ctgctggcaa actggcatta cctggtttgt ggggatgggg gggcaagtgt      240
gtggcctctc ggcttggtta gcaagaacat tcagggtagg cctaagttan tcgtgttagt      300
t                                                                                   301

```

```

<210> 257
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 257
gttggtggagg aactctggct tgctcattaa gtectactga ttttcaactat cccctgaatt      60
tccccactta tttttgtctt tcactatcgc aggccttaga agaggtctac ctgcctccag      120
tcttacctag tccagtctac cccctggagt tagaatggcc atcctgaagt gaaaagtaat      180

```

gtcacattac tcccttcagt gattttcttgt agaagtgcc atccctgaat gccaccaaga 240
 tcttaatctt cacatcttta atcttatctc tttgactcct ctttacaccg gagaaggctc 300
 c 301

<210> 258
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (301)
 <223> n = A,T,C or G

<400> 258
 cagcagtagt agatgccgta tgccagcacg cccagcactc ccaggatcag caccagcacc 60
 aggggcccag ccaccaggcg cagaagcaag ataaacagta ggctcaagac cagagccacc 120
 cccagggcaa caagaatcca ataccaggac tgggcaaaat cttcaaagat cttaacactg 180
 atgtctcggg cattgaggct gtcaataana cgctgatccc ctgctgtatg gtgggtgcat 240
 tggatgatccc tgggagcgcc ggtggagtaa cgttggtcca tggaaagcag cgcccacaac 300
 t 301

<210> 259
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (301)
 <223> n = A,T,C or G

<400> 259
 tcatatatgc aaacaaatgc agactangcc tcaggcagag actaaaggac atctcttggg 60
 gtgtcctgaa gtgatttggg ccctgaggg cagacaccta agtaggaatc ccagtgggaa 120
 gcaaagccat aaggaagccc aggattcctt gtgatcagga agtgggcccag gaaggtctgt 180
 tccagctcac atctcatctg catgcagcac ggaccggatg cgcccactgg gtcttggctt 240
 ccctcccatc ttctcaagca gtgtccttgt tgagccattt gcaccccttg ctccagggtg 300
 c 301

<210> 260
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 260
 ttttttttct ccctaaggaa aaagaaggaa caagtctcat aaaaccaa at aagcaatggt 60
 aagggtgtctt aacttgaaaa agattaggag tcaactggtt acaagttata attgaatgaa 120
 agaactgtaa cagccacagt tggccatttc atgccaatgg cagcaaaca caggattaac 180
 tagggcaaaa taaataagtg tgtggaagcc ctgataagt cttaataaac agactgattc 240
 actgagacat cagtacctgc ccgggcggcc gctcgagccg aattctgcag atatccatca 300
 c 301

<210> 261
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 261

```

aaatattcga gcaaactctg taactaatgt gtctccataa aaggctttga actcagtgaa      60
tctgcttcca tccacgattc tagcaatgac ctctcggaca tcaaagctcc tcttaagggt      120
agcaccaact attccataca attcatcagc aggaaataaa ggctcttcag aagggttcaat      180
ggtgacatcc aatttcttct gataatttag attcctcaca accttcctag ttaagtgaag      240
ggcatgatga tcatccaaag cccagtgggc acttactcca gactttctgc aatgaagatc      300
a                                                                                   301

```

<210> 262

<211> 301

<212> DNA

<213> Homo sapien

<400> 262

```

gaggagagcc tggtacagca tttgtaagca cagaatactc caggagtatt tgtaattgtc      60
tgtgagcttc ttgccgcaag tctctcagaa atttaaaaag atgcaaactc ctgagtcacc      120
cctagacttc ctaaaccaga tcctctgggg ctggaacctg gcactctgca tttgtaatga      180
gggctttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtcccc      240
catcattacc cccacattat aatgggatag attcagagca gatactctcc agcaaagaat      300
c                                                                                   301

```

<210> 263

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 263

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tttagcttgt ggtaaatagac tcacaaaact gattttaaaa tcaagttaat gtgaattttg      60
aaaattacta cttaatccta attcacaata acaatggcat taaggtttga cttgagttgg      120
ttcttagtat tatttatggg aaataggctc ttaccacttg caaataactg gccacatcat      180
taatgactga cttcccagta aggctctcta aggggtaagt angaggatcc acaggatttg      240
agatgctaag gccccagaga tcgtttgatc caaccctctt attttcagag gggaaaatgg      300
g                                                                                   301

```

<210> 264

<211> 301

<212> DNA

<213> Homo sapien

<400> 264

```

aaagacgtta aaccactcta ctaccacttg tggaactctc aaagggtaaa tgacaaaasc      60
aatgaatgac tctaaaaaca atattttacat ttaatggttt gtagacaata aaaaaacaag      120
gtggatagat ctagaattgt aacattttta gaaaaccata scatttgaca gatgagaaag      180
ctcaattata gatgcaaagt tataactaaa ctactatagt agtaaagaaa tacatttcac      240
acccttcata taaattcact atcttggtt gaggcactcc ataaaatgta tcacgtgcat      300
a                                                                                   301

```

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

tgcccaagtt	atgtgtaagt	gtatccgcac	ccagaggtaa	aactacactg	tcattcttgt	60
cttcttgtga	cgcagtattt	cttctctggg	gagaagccgg	gaagtcttct	cctggctcta	120
catattcttg	gaagtctcta	atcaactttt	gttccatttg	tttcatttct	tcaggaggga	180
ttttcagttt	gtcaacatgt	tctctaacaa	cacttgccca	tttctgtaaa	gaatccaaag	240
cagtccaagg	ctttgacatg	tcaacaacca	gcataactag	agtatccttc	agagatacgg	300
c						301

<210> 266
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 266						
taccgtctgc	cttctctccc	atccaggcca	tctgcgaatc	tacatgggtc	ctcctattcg	60
acaccagatc	actctttcct	ctacccacag	gcttgctatg	agcaagagac	acaacctcct	120
ctcttctgtg	ttccagcttc	ttttcctgtt	cttcccaccc	cttaagttct	attcctgggg	180
atagagacac	caatacccat	aacctctctc	ctaagcctcc	ttataaccca	gggtgcacag	240
cacagactcc	tgacaactgg	taaggccaat	gaactgggag	ctcacagctg	gctgtgcctg	300
a						301

<210> 267
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 267						
aaagagcaca	ggccagctca	gcctgcccctg	gccatctaga	ctcagcctgg	ctccatgggg	60
gttctcagtg	ctgagtcctat	ccaggaaaag	ctcacctaga	ccttctgagg	ctgaatcttc	120
atcctcacag	gcagcttctg	agagcctgat	attcctagcc	ttgatgggtc	ggagtaaagc	180
ctcattctga	ttcctctcct	tcttttcttt	caagttggct	ttcctcacat	ccctctgttc	240
aattcgcttc	agcttgtctg	ctttagccct	catttccaga	agcttcttct	ctttggcatc	300
t						301

<210> 268
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 268						
aatgtctcac	tcaactactt	cccagcctac	cgtggcctaa	ttctgggagt	tttcttctta	60
gatcttggga	gagctgggtc	ttctaaggag	aaggaggaag	gacagatgta	actttggatc	120
tcgaagagga	agtctaattg	aagtaattag	tcaacgggtc	ttgttttagac	tcttgggaata	180
tgctgggtgg	ctcagtgagc	ccttttggag	aaagcaagta	ttattcttaa	ggagtaacca	240
cttcccattg	ttctactttc	taccatcatc	aattgtatat	tatgtattct	ttggagaact	300
a						301

<210> 269
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 269						
taacaatata	cactagctat	ctttttaact	gtccatcatt	agcaccaatg	aagattcaat	60
aaaattacct	ttattcacac	atctcaaaac	aattctgcaa	attcttagtg	aagtttaact	120
atagtcacag	accttaaata	ttcacattgt	tttctatgtc	tactgaaaat	aagttcacta	180
cttttctgga	tattctttac	aaaatcttat	taaaattcct	ggtattatca	cccccaatta	240
tacagtagca	caaccacctt	atgtagttht	tacatgatag	ctctgtagaa	gtttcacatc	300
t						301

<210> 270
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 270
 cattgaagag cttttgcgaa acatcagaac acaagtgtt ataaaattaa ttaagcctta 60
 cacaagaata catattcctt ttatttctaa ggagttaaac atagatgtag ctgatgtgga 120
 gagcttgctg gtgcagtgc tatttgataa cactattcat ggccgaattg atcaagtcaa 180
 ccaactcctt gaactggatc atcagaagaa ggggtggtgca cgatatactg cactagataa 240
 tggaccaacc aactaaattc tctcaccagg ctgtatcagt aaactggctt aacagaaaaac 300
 a 301

<210> 271
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 271
 aaaaggttct cataagatta acaatttaaa taaatatttg atagaacatt ctttctcatt 60
 tttatagctc atcttttaggg ttgatattca gttcatgtt cccttgctgt tcttgatcca 120
 gaattgcaat cacttcatca gcctgtattc gctccaattc tctataaagt gggccaagg 180
 tgaaccacag agccacagca cacctcttcc ccttggtgac tgccttcacc ccatganggt 240
 tctctctccc agatganaac tgatcatgcy cccacatttt ggggtttata gaagcagtca 300
 c 301

<210> 272
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 272
 taaattgcta agccacagat aacaccaatc aaatggaaca aatcactgtc ttcaaagtgc 60
 ttatcagaaa accaaatgag cctggaatct tcataatacc taaacatgcc gtatttagga 120
 tccaataatt ccctcatgat gagcaagaaa aattccttgc gcaccctccc tgcattccaca 180
 gcatcttctc caacaaatat aaccttgagt ggcttcttgt aatctatgtt ctttggttttc 240
 ctaaggactt ccattgcac tctacaata ttttctctac gcaccactag aattaagcag 300
 g 301

<210> 273
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 273
 acatgtgtgt atgtgtatct ttgggaaaaa aanaagacat cttgtttayt atttttttgg 60
 agagangctg ggacatggat aatcacwtaa tttgctayta tyactttaat ctgactygaa 120

```

gaaccgtcta aaaataaaat ttaccatgtc dtatattcct tatagtatgc ttatttcacc      180
ttytttctgt ccagagagag tatcagtgc ananatttma ggggtgaamac atgmattggg      240
gggacttnty tttacngagm accctgcccg sgcgccctcg makcngantt ccgcsananc      300
t                                                                                   301

```

<210> 274

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 274

```

cttatatact ctttctcaga ggcaaaagag gagatgggta atgtagacaa ttctttgagg      60
aacagtaaatt gattattaga gagaangaat ggaccaagga gacagaaatt aacttgtaaa      120
tgattctctt tggaatctga atgagatcaa gaggccagct ttagcttggtg gaaaagtcca      180
tctaggtatg gttgcattct cgtcttctt tctgcagtag ataatgaggt aaccgaaggc      240
aattgtgctt cttttgataa gaagctttct tggtcatatc aggaaattcc aganaaagtc      300
c                                                                                   301

```

<210> 275

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 275

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tcggtgtcag cagcacgtgg cattgaacat tgcaatgtgg agcccaaacc acagaaaatg      60
gggtgaaatt ggccaacttt ctattaactt atgttggaac ttttgccacc aacagtaagc      120
tgcccttctt aataaaagaa aattgaaagg tttctcacta aacggaatta agtagtgag      180
tcaagagact cccaggcctc agcgtacctg cccgggcggc cgctcgaagc cgaattctgc      240
agatatccat cacactggcg gncgctcgan catgcatcta gaaggnccaa ttcgccctat      300
a                                                                                   301

```

<210> 276

<211> 301

<212> DNA

<213> Homo sapien

<400> 276

```

tgtacacata ctcaataaat aaatgactgc attgtggtat tattactata ctgattatat      60
ttatcatgtg acttctaatt agaaaatgta tccaaaagca aaacagcaga tatacaaaat      120
taaagagaca gaagatagac attaacagat aaggcaactt atacattgag aatccaaatc      180
caatacattt aaacatttgg gaaatgaggg ggacaaatgg aagccagatc aaatttgtgt      240
aaaactattc agtatgtttc ccttgcttca tgtctgagaa ggctctcctt caatggggat      300
g                                                                                   301

```

<210> 277

<211> 301

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 277
 tttgttgatg tcagtatttt attacttgcg ttatgagtgc tcacctggga aattctaaag 60
 atacagagga cttggaggaa gcagagcaac tgaatttaac ttaaaagaag gaaaacattg 120
 gaatcatggc actcctgata ctttcccaaa tcaacactct caatgccccca ccctcgtcct 180
 caccatagtg gggagactaa agtggccacg gatttgctt anggtgtcag tgcgttctga 240
 gttcncgtgc gattacatct gaccagtctc ctttttccga agtcntccg ttcaatcttg 300
 c 301

<210> 278
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 278
 taccactaca ctccagcctg ggcaacagag caagacctgt ctcaaagcat aaaatggaat 60
 aacatatcaa atgaaacagg gaaaatgaag ctgacaattt atggaagcca gggcttgta 120
 cagtctctac tggtattatg cattacctgg gaatttatat aagcccttaa taataatgcc 180
 aatgaacatc tcatgtgtgc tcacaatgtt ctggcactat tataagtgtc tcacagggtt 240
 tatgtgttct tcgtaacttt atggantagg tactcggccg cgaacacgct aagccgaatt 300
 c 301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 279
 aaagcaggaa tgacaaagct tgcttttctg gtatgttcta ggtgtattgt gacttttact 60
 gttatattaa ttgccaatat aagtaaatat agattatata tgtatagtgt ttcacaaagc 120
 ttagaccttt accttcacgc caccacacag tgcttgatat ttcagagtca gtcattgggt 180
 atacatgtgt agttccaaag cacataagct agaanaanaa atatttctag ggagcactac 240
 catctgtttt cacatgaaat gccacacaca tagaactcca acatcaattt cattgcacag 300
 a 301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280
 ggtaactggag ttttctctcc ctgtgaaaac gtaactactg ttgggagtga attgaggatg 60
 tagaaagggtg gtggaaccaa attgtgggtca atggaaatag gagaatatgg ttctcactct 120

tgagaaaaaa	acctaagatt	agcccaggta	gttgccctgta	acttcagttt	ttctgcctgg	180
gtttgatata	gttttagggt	ggggttagat	taagatctaa	attacatcag	gacaaagaga	240
cagactatta	actccacagt	taattaagga	ggtatgttcc	atgtttattt	gttaaagcag	300
t						301

<210> 281
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 281						
aggtacaaga	aggggaatgg	gaaagagctg	ctgctgtggc	attgttcaac	ttggatattc	60
gccgagcaat	ccaaatcctg	aatgaagggg	catcttctga	aaaaggagat	ctgaatctca	120
atgtggtagc	aatggcttta	tcgggttata	cggatgagaa	gaactccctt	tggagagaaa	180
tgtgtagcac	actgcgatta	cagctaaata	acccgtattt	gtgtgtcatg	tttgcatttc	240
tgacaagtga	aacaggatct	tacgatggag	ttttgtatga	aaacaaagtt	gcagtacctc	300
g						301

<210> 282
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 282						
caggtactac	agaattaaaa	tactgacaag	caagtagttt	cttggcgtgc	acgaattgca	60
tccagaaccc	aaaaattaag	aaattcaaaa	agacattttg	tgggcacctg	ctagcacaga	120
agcgcagaag	caaagcccag	gcagaaccat	gctaacctta	cagctcagcc	tgcacagaag	180
cgcagaagca	aagcccaggc	agaaccatgc	taaccttaca	gctcagcctg	cacagaagcg	240
cagaagcaaa	gcccaggcag	aacatgctaa	ccttacagct	cagcctgcac	agaagcacag	300
a						301

<210> 283
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 283						
atctgtatac	ggcagacaaa	ctttatarag	tgtagagagg	tgagcgaaag	gatgcaaaag	60
cactttgagg	gctttataat	aatatgctgc	ttgaaaaaaa	aaatgtgtag	ttgatactca	120
gtgcatctcc	agacatagta	aggggttgct	ctgaccaatc	aggtgatcat	tttttctatc	180
acttcccagg	ttttatgcaa	aaattttggt	aaattctata	atggtgatat	gcactcttta	240
ggaaacatat	acatttttta	aatctattt	tatgtaagaa	ctgacagacg	aatttgcttt	300
g						301

<210> 284
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 284						
caggtacaaa	acgctattaa	gtggcttaga	atttgaacat	ttgtggtctt	tattttacttt	60
gcttcgtgtg	tgggcaaagc	aacatcttcc	ctaaatatat	attaccaaga	aaagcaagaa	120
gcagattagg	tttttgacaa	aacaaacagg	ccaaaagggg	gctgacctgg	agcagagcat	180
ggtgagaggc	aaggcatgag	agggcaagtt	tgttgtggac	agatctgtgc	ctactttatt	240
actggagtaa	aagaaaacaa	agttcattga	tgtcgaagga	tatatacagt	gtagaaaatt	300
a						301

<210> 285

<211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 285
 acatcaccat gatcggtacc cccacccatt atacgttgta tgtttacata aatactcttc 60
 aatgatcatt agtggtttta aaaaaatact gaaaactcct tctgcatccc aatctctaac 120
 caggaaagca aatgctatct acagacctgc aagccctccc tcaaacnaaa ctatttctgg 180
 attaaatatg tctgacttct tttgagggtca cagcactagg caaatgctat ttacgatctg 240
 caaaagctgt ttgaagagtc aaagccccc tgtgaacacg atttctggac cctgtaacag 300
 t 301

<210> 286
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 286
 taccactgca ttccagcctg ggtgacagag tgagactccg tctccaaaaa aaactttgct 60
 tgtatattat ttttgcctta cagtggatca ttctagtagg aaaggacagt aagatttttt 120
 atcaaaatgt gtcatgccag taagagatgt tatattcttt tctcatttct tccccacca 180
 aaaataagct accatatagc ttataagtct caaatttttg ccttttacta aaatgtgatt 240
 gtttctgttc attgtgtatg cttcatcacc tatatttaggc aaattccatt tttcccttg 300
 t 301

<210> 287
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 287
 tacagatctg ggaactaaat attaaaaatg agtgtggctg gatatatgga gaatgttggg 60
 cccagaagga acgtagagat cagatattac aacagctttg ttttgagggt tagaaatatg 120
 aaatgatttg gttatgaacg cacagttagg gcagcagggc cagaatcctg accctctgcc 180
 ccgtggttat ctctcccca gcttggctgc ctcatgttat cacagtattc cattttgttt 240
 gttgcatgtc ttgtgaagcc atcaagattt tctcgtctgt tttcctctca ttggtaatgc 300
 t 301

<210> 288
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 288
 gtacacctaa ctgcaaggac agctgaggaa tgtaatgggc agccgctttt aaagaagtag 60
 agtcaatagg aagacaaatt ccagttccag ctcatgtctg gtatctgcaa agctgcaaaa 120
 gatcttttaa gacaatttca agagaatatt tccttaaagt tggcaatttg gagatcatac 180
 aaaagcatct gcttttgtga ttttaatttag ctcatctggc cactggaaga atccaaacag 240
 tctgccttaa ttttggatga atgcatgatg gaaattcaat aatttagaaa gttaaaaaaa 300
 a 301

<210> 289
 <211> 301

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 289
ggtagactgt ttccatgtta tgtttctaca cattgctacc tcagtgtcc tggaaactta 60
gcttttgatg tctccaagta gtccaccttc atttaactct ttgaaactgt atcatctttg 120
ccaagtaaga gtggtggcct atttcagctg ctttgacaaa atgactggct cctgacttaa 180
cgttctataa atgaatgtgc tgaagcaaag tgcccatggg ggcggcgaan aagagaaaga 240
tgtgttttgt tttggactct ctgtgggtccc ttccaatgct gtgggtttcc aaccagngga 300
a 301

<210> 290
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 290
acactgagct cttcttgata aatatacaga atgcttggca tatacaagat tctatactac 60
tgactgatct gttcatttct ctcacagctc ttaccccca aagcttttcc accctaagtg 120
ttctgacctc ctttttctaat cacagtaggg atagaggcag anccacctac aatgaacatg 180
gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctagcagtgc 240
tgccttgaac aaaaacattt ctccatgtct cattttcttc atgcctcaag taacagttag 300
a 301

<210> 291
<211> 301
<212> DNA
<213> Homo sapien

<400> 291
caggtacca tttcttctat cctagaaaca tttcatttta tggtgttgaa acataacaac 60
tatatcagct agattttttt tctatgcttt acctgctatg gaaaatttga cacattctgc 120
tttactcttt tgtttatagg tgaatcacia aatgtatttt tatgtattct gtagttcaat 180
agccatggct gtttacttca tttaatttat ttagcataaa gacattatga aaaggcctaa 240
acatgagctt cacttcccca ctaactaatt agcatctggt atttcttaac cgtaatgcct 300
a 301

<210> 292
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 292

```

accttttagt agtaatgtct aataataaat aagaaatcaa ttttataagg tccatatagc      60
tgtattaaat aatttttaag tttaaaagat aaaataccat catttttaaat gttggtattc      120
aaaaccaaag natataaccg aaaggaaaaa cagatgagac ataaaatgat ttgcnagatg      180
ggaaatatag tasttyatga atgttnatta aattccagtt ataatagtgg ctacacactc      240
tcactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa      300
a                                                                                   301

```

```

<210> 293
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 293
ggtaccaagt gctgggtgcc gctgtttacc tgtttctcact gaaaagtctg gctaattgctc      60
ttgtgtagtc acttctgatt ctgacaatca atcaatcaat ggcctagagc actgactgtt      120
aacacaaaacg tcactagcaa agtagcaaca gctttaagtc taaatacaaa gctgtttctgt      180
gtgagaattt tttaaaaggc tacttgtata ataacccttg tcatttttaa tgtacctcgg      240
ccgcgaccac gctaagccga attctgcaga tatccatcac actggcggcc gctcgagcat      300
g                                                                                   301

```

```

<210> 294
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 294
tgaccataaa caatatacac tagctatctt tttaactgtc catcattagc accaatgaag      60
attcaataaa attaccttta ttcacacatc tcaaaaacaat tctgcaaatt cttagtgaag      120
tttaactata gtcacaganc ttaaatattc acattgtttt ctatgtctac tgaaaataag      180
ttcactactt ttctgggata ttctttacaa aatcttatta aaattcctgg tattatcacc      240
cccaattata cagtagcaca accaccttat gtagttttta catgatatgt ctgtagaggt      300
t                                                                                   301

```

```

<210> 295
<211> 305
<212> DNA
<213> Homo sapien

```

```

<400> 295
gtactctttc tctccctccc tctgaattta attctttcaa cttgcaattt gcaaggatta      60
cacatttcac tgtgatgtat attgtgttgc aaaaaaaaaa gtgtctttgt ttaaaattac      120
ttggtttgat aatccatctt gctttttccc cattggaact agtcattaac ccatctctga      180
actggtagaa aaacrtctga agagctagtc tatcagcatc tgacagggtga attggatggg      240
tctcagaacc atttcacca gacagcctgt ttctatcctg ttaataaat tagtttgggt      300
tctct                                                                                   305

```

```

<210> 296
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 296
aggtagctat ggaagctgct aaaataatat ttgatagtaa aagtagtaa tgtgctatct      60

```



```

cacctagtag taaactaaaa ataaactgaa actttatgga atctgaagtt attttccttg      120
attaatataga attaataaac caatatgagg aaacatgaaa ccatgcaatc tactatcaac      180
tttgaaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt      240
tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg      300
c

```

<210> 297

<211> 300

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (300)

<223> n = A,T,C or G

<400> 297

```

actgagtttt aactggacgc caagcaggca aggctggaag gttttgctct ctttgtgcta      60
aaggttttga aaaccttgaa ggagaatcat ttgacaaga agtacttaag agtctagaga      120
acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt      180
tccatcattg ggagtgcact ggccatccct caaaatttgt ctgggctggc ctgagtggtc      240
accgcacctc ggccgcgacc acgctaagcc gaattctgca gatatccatc acactggcgg      300

```

<210> 298

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 298

```

tatggggttt gtcacccaaa agctgatgct gagaaaggcc tccctggggc cctcccgcg      60
ggcatctgag agacctggtg ttccagtgtt tctggaaatg ggtcccagtg ccgccggctg      120
tgaagctctc agatcaatca cggaagggc ctggcggtgg tggccacctg gaaccaccct      180
gtcctgtctg ttacatttc actaycagg tttctctggg cattacnatt tgttccccta      240
caacagtgac ctgtgcattc tgctgtggcc tgctgtgtct gcagggtggct ctcagcgagg      300
t

```

<210> 299

<211> 301

<212> DNA

<213> Homo sapien

<400> 299

```

gttttgagac ggagtttcac tcttggtgcc cagactggac tgcaatggca gggctctctgc      60
tactgcacc ctctgcctcc caggttcgag caattctcct gcctcagcct cccaggtagc      120
tggtgattgca ggctcacgcc accataccca gctaattttt ttgtattttt agtagagacg      180
gagtttcgcc atgttggcca gctgggtctca aactcctgac ctcaagcgac ctgcctgcct      240
cggcctccca aagtgtcgtga attataggca tgagtcaaca cgcccagcct aaagatatatt      300
t

```

<210> 300

<211> 301

<212> DNA

<213> Homo sapien

<400> 300

attcagttttt	atttgctgcc	ccagtatctg	taaccaggag	tgccacaaaa	tcttgccaga	60
tatgtcccac	accactggg	aaaggctccc	acctggctac	ttcctctatc	agctgggtca	120
gctgcattcc	acaaggttct	cagcctaata	agtttacta	cctgccagtc	tcaaaaactta	180
gtaaagcaag	accatgacat	tccccacgg	aaatcagagt	ttgccccacc	gtcttggttac	240
tataaagcct	gcctctaaca	gtccttgctt	cttcacacca	atcccagagc	catcccccat	300
g						301

<210> 301

<211> 301

<212> DNA

<213> Homo sapien

<400> 301

ttaaattttt	gagaggataa	aaaggacaaa	taatctagaa	atgtgtcttc	ttcagttctgc	60
agaggacccc	aggtctccaa	gcaaccacat	ggtcaagggc	atgaataatt	aaaagttggt	120
gggaactcac	aaagaccctc	agagctgaga	caccacacac	agtgggagct	cacaaagacc	180
ctcagagctg	agacacccac	aacagtggga	gtcacaaaag	accctcagag	ctgagacacc	240
cacaacagca	cctcgttcag	ctgccacatg	tgtgaataag	gatgcaatgt	ccagaagtgt	300
t						301

<210> 302

<211> 301

<212> DNA

<213> Homo sapien

<400> 302

aggtagacat	ttagcttggt	gtaaattgact	cacaaaactg	attttaaaat	caagttaatg	60
tgaattttga	aaattactac	ttaatecctaa	ttcacaataa	caatggcatt	aaggtttgac	120
ttgagttggt	tcttagtatt	atztatggta	aataggctct	taccacttgc	aaataactgg	180
ccacatcatt	aatgactgac	ttcccagtaa	ggctctctaa	ggggtaagta	ggaggatcca	240
caggatttga	gatgctaagg	ccccagagat	cgtttgatcc	aaccctctta	ttttcagagg	300
g						301

<210> 303

<211> 301

<212> DNA

<213> Homo sapien

<400> 303

aggtagcaac	tgtggaaata	ggtagaggat	cattttttct	ttccatatca	actaagttgt	60
atattgtttt	ttgacagttt	aacacatctt	cttctgtcag	agattctttc	acaatagcac	120
tggctaattg	aactaccgct	tgcattgtta	aaatgggtgt	ttgtgaaatg	atcataggcc	180
agtaacgggt	atgtttttct	aactgatctt	ttgctcgttc	caaagggacc	tcaagacttc	240
catcgatttt	atatctgggg	tctagaaaag	gagttaatct	gttttccctc	ataaattcac	300
c						301

<210> 304

<211> 301

<212> DNA

<213> Homo sapien

<400> 304

acatggatgt	tatttttcag	actgtcaacc	tgaatttgta	tttgcttgac	attgcctaata	60
tattagtttc	agtttcagct	taccactttt	ttgtctgcaa	catgcaraas	agacagtgc	120
cttttttagt	tatcatatca	ggaatcatct	cacattgggt	tgtgccatta	ctgggtgcagt	180
gactttcagc	cacttgggta	aggtggaggt	ggccatatgt	ctccactgca	aaattactga	240

ttttcctttt gtaattaata agtgtgtgtg tgaagattct ttgagatgag gtatatatct 300
c 301

<210> 305

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 305

gangtacagc gtggtcaagg taacaagaag aaaaaaatgt gagtggcatc ctgggatgag 60
caggggggaca gacctggaca gacacgttgt catttgctgc tgtgggtagg aaaatgggag 120
taaaggagga gaaacagata caaaatctcc aactcagtat taaggatttc tcatgcctag 180
aatattggta gaaacaagaa tacattcata tggcaaataa ctaaccatgg tggaacaaaa 240
ttctgggatt taagttggat accaangaaa ttgtattaaa agagctgttc atggaataag 300
a 301

<210> 306

<211> 8

<212> PRT

<213> Homo sapien

<400> 306

Val Leu Gly Trp Val Ala Glu Leu
1 5

<210> 307

<211> 637

<212> DNA

<213> Homo sapien

<400> 307

acagggratg aagggaaagg gagaggatga ggaagccccc ctggggatttt ggtttggtcc 60
ttgtgatcag gtggtctatg gggcttatcc ctacaaagaa gaatccagaa ataggggcac 120
attgaggaat gatacttgag cccaaagagc attcaatcat tgttttattt gccttmtttt 180
cacaccattg gtgagggagg gattaccacc ctgggggttat gaagatgggt gaacacccca 240
cacatagcac cggagatatg agatcaacag tttcttagcc atagagattc acagcccaga 300
gcaggaggac gcttgcacac catgcaggat gacatggggg atgcgctcgg gattgggtgtg 360
aagaagcaag gactgttaga ggcaggcttt atagtaacaa gacgggtggg caaactctga 420
tttccgtggg ggaatgtcat ggtcttgctt tactaagttt tgagactggc aggtagtga 480
actcattagg ctgagaacct tgtggaatgc acttgaccca sctgatagag gaagtagcca 540
gggtgggagcc tttcccagtg ggtgtgggac atatctggca agattttgtg gcactcctgg 600
ttacagatac tggggcagca aataaaaactg aatcttg 637

<210> 308

<211> 647

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(647)

<223> n = A,T,C or G

<400> 308

acgattttca	ttatcatgta	aatcgggtca	ctcaaggggc	caaccacagc	tgggagccac	60
tgctcagggg	aaggttcata	tgggactttc	tactgcccac	ggttctatac	aggatataaa	120
ggngcctcac	agtatagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
ccacccctct	gaccctttgg	aactcctctg	acccttttaga	acaagcctac	ctaatatctg	240
ctagagaaaa	gaccaacaac	ggcctcaaag	gatctcttac	catgaaggtc	tcagctaatt	300
cttgggctaag	atgtgggttc	cacattaggt	tctgaatatg	gggggaaggg	tcaatttgct	360
catttttgtgt	gtggataaag	tcaggatgcc	caggggccag	agcagggggc	tgcttgcttt	420
gggaacaatg	gctgagcata	taaccatagg	ttatggggaa	caaaacaaca	tcaaagtcac	480
tgtatcaatt	gccatgaaga	cttgaggggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	tttttctcct	gcttctgact	tgataaaaag	ggaccgt		647

<210> 309

<211> 460

<212> DNA

<213> Homo sapien

<400> 309

actttatagt	ttaggctgga	cattggaaaa	aaaaaaaaagc	cagaacaaca	tgtgatagat	60
aatgatgtg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gagcacatct	tcagcaagag	ggggaataac	tcatactttt	tggccagcag	ttgtttgatc	180
accaaacatc	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaagtcag	240
ggggaattta	ttcctggcaa	ttttaattgg	actccttatg	tgagagcagc	ggctaccagc	300
ctggggtggt	ggagcgaacc	cgtcactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctgta	gcactcaaat	420
ttgtcttggt	tttgtctttc	ggtgtgtaag	attcttaagt			460

<210> 310

<211> 539

<212> DNA

<213> Homo sapien

<400> 310

acgggactta	tcaaataaag	ataggaaaag	aagaaaactc	aaatattata	ggcagaaatg	60
ctaaagggtt	taaaatatgt	caggattgga	agaaggcatg	gataaagaac	aaagttcagt	120
taggaaagag	aaacacagaa	ggaagagaca	caataaaagt	cattatgtat	tctgtgagaa	180
gtcagacagt	aagatttggt	ggaaatgggt	tggtttggtg	tatgggtatg	attttagcaa	240
taatctttat	ggcagagaaa	gctaaaatcc	tttagcttgc	gtgaatgatc	acttgctgaa	300
ttcctcaagg	taggcatgat	gaaggagggt	ttagaggaga	cacagacaca	atgaactgac	360
ctagatagaa	agccttagta	tactcagcta	ggaatagtga	ttctgagggc	acactgtgac	420
atgattatgt	cattacatgt	atggtagtga	tggggatgat	aggaaggaag	aacttatggc	480
atattttcac	ccccacaaaa	gtcagttaaa	tattgggaca	ctaaccatcc	aggtcaaga	539

<210> 311

<211> 526

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (526)

<223> n = A, T, C or G

<400> 311

caaatttgag	ccaatgacat	agaattttac	aatcaagaa	gcttattctg	gggccatttc	60
ttttgacgtt	ttctctaaac	tactaaagag	gcattaatga	tccataaatt	atattatcta	120
catttacagc	atttaaaatg	tgttcagcat	gaaatattag	ctacagggga	agctaaataa	180

attaacatg gaataaagat ttgtccttaa atataatcta caagaagact ttgatatttg	240
tttttcacaa gtgaagcatt cttataaagt gtcataacct ttttggggaa actatgggaa	300
aaaatgggga aactctgaag ggttttaagt atcttacctg aagctacaga ctccataacc	360
tctctttaca gggagctcct gcagccccta cagaaatgag tggctgagat tcttgattgc	420
acagcaagag cttctcatct aaaccctttc cttttttagt atctgtgtat caagtataaa	480
agttctataa actgtagtnt acttatttta atccccaaag cacagt	526

<210> 312

<211> 500

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(500)

<223> n = A,T,C or G

<400> 312

cctctctctc cccacccct gactctagag aactggggtt tctcccagta ctccagcaat	60
tcatttctga aagcagttga gccactttat tccaaagtac actgcagatg ttcaaactct	120
ccatttctct tcccttcca cctgccagtt ttgctgactc tcaacttgct atgagtgtaa	180
gcattaagga cattatgctt cttcgattct gaagacaggc cctgctcatg gatgactctg	240
gcttcttagg aaaatatttt tcttccaaaa tcagtaggaa atctaaactt atccccctctt	300
tgcagatgtc tagcagcttc agacatttgg ttaagaaccc atgggaaaaa aaaaaatcct	360
tgctaagtgt gtttcctttg taaaccanga ttcttatttg nctggtatag aatatcagct	420
ctgaacgtgt ggtaaagatt tttgtgtttg aatataggag aaatcagttt gctgaaaagt	480
tagtcttaat tatctattgg	500

<210> 313

<211> 718

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(718)

<223> n = A,T,C or G

<400> 313

ggagatttgt gtggtttgca gccgagggag accaggaaga tctgcatggt gggaaggacc	60
tgatgataca gaggtgagaa ataagaaagg ctgctgactt taccatctga ggccacacat	120
ctgctgaaat ggagataatt aacatcacta gaaacagcaa gatgacaata taatgtctaa	180
gtagtgacat gtttttgcac atttccagcc ctttttaaata tccacacaca caggaagcac	240
aaaaggaagc acagagatcc ctgggagaaa tgcccggccg ccatcttggg tcatcgatga	300
gcctcgccct gtgcctgntc ccgcttgtga gggaaggaca ttagaaaatg aattgatgtg	360
ttccttaaag gatggcagga aaacagatcc tggttggat atttatttga acgggattac	420
agatttgaaa tgaagtcaca aagtgagcat taccaatgag aggaaaacag acgagaaaat	480
cttgatgggt cacaagacat gcaacaaaca aaatggaata ctgtgatgac acgagcagcc	540
aactggggag gagataccac ggggcagagg tcaggattct ggccctgctg cctaactgtg	600
cgttatacca atcattttcta tttctaccct caaacaagct gtngaatatc tgacttacgg	660
ttcttntggc ccacattttc atnatccacc cntcntttt aannttantc caaantgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

gtttattttac	attacagaaa	aaacatcaag	acaatgtata	ctatttcaaa	tatatccata	60
cataatcaaa	tatagctgta	gtacatgttt	tcattggtgt	agattaccac	aaatgcaagg	120
caacatgtgt	agatctcttg	tcttattctt	ttgtctataa	tactgtattg	tgtagtccaa	180
gctctcggta	gtccagccac	tgtgaaacat	gctcccttta	gattaacctc	gtggacgctc	240
ttgttgatt	gctgaactgt	agtgcctgt	attttgcttc	tgtctgtgaa	ttctgttgct	300
tctggggcat	ttccttgta	tgcagaggac	caccacacag	atgacagcaa	tctgaatt	358

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

taccacctcc	ccgctggcac	tgatgagccg	catcaccatg	gtcaccagca	ccatgaaggc	60
atagggtgatg	atgaggacat	ggaatggggc	cccaaggatg	gtctgtccaa	agaagcgagt	120
gacccccatt	ctgaagatgt	ctggaacctc	taccagcagg	atgatgatag	ccccaatgac	180
agtcaccagc	tccccgacca	gccggatatc	gtccttaggg	gtcatgtagg	cttcctgaag	240
tagcttctgc	tgtaagaggg	tgttgtcccc	ggggctcgtg	cggttattgg	tcctgggctt	300
gagggggcgg	tagatgcagc	acatggtgaa	gcagatgatg	t		341

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

agactgggca	agactcttac	gccccacact	gcaatttggt	cttgttgccg	tatccattta	60
tgtgggcctt	tctcgagttt	ctgattataa	acaccactgg	agcgatgtgt	tgactggact	120
cattcaggga	gctctgggtg	caatattagt	t			151

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

agaactagtg	gatacctaag	aaataacctga	aacatatatt	ggcattttatc	aatgggtcaa	60
atctttcattt	atctctggcc	ttaacctgtg	ctcctgaggc	tgcgggccagc	agatcccagg	120
ccagggtctct	gttcttgcca	cacctgcttg	a			151

<210> 318

<211> 151

<212> DNA

<213> Homo sapien

<400> 318

actggtggga	ggcgtgttt	agttggtgt	tttcagaggg	gtcttttcgga	gggacctcct	60
gctgcaggct	ggagtgtctt	tattcctggc	gggagaccgc	acattccact	gctgaggctg	120
tgggggacgt	ttatcaggca	gtgataaaca	t			151

<210> 319

<211> 151

<212> DNA

<213> Homo sapien

<400> 319

aactagtggga	tccagagcta	taggtacagt	gtgatctcag	ctttgcaaac	acattttcta	60
catagatagt	actaggtatt	aatagatatg	ttaaagaaaga	aatcacacca	ttaataatgg	120

taagattggg tttatgtgat tttagtgggt a 151

<210> 320
<211> 150
<212> DNA
<213> Homo sapien

<400> 320

aactagtgga tccactagtc cagtgtgggtg gaattccatt gtgttgggggt tctagatcgc 60
gagcggctgc cttttttttt tttttttttg ggggggaatt tttttttttt aatagttatt 120
gagtgttcta cagcttacag taaataccat 150

<210> 321
<211> 151
<212> DNA
<213> Homo sapien

<400> 321

agcaactttg tttttcatcc aggttatttt aggccttagga tttcctctca cactgcagtt 60
taggggtggca ttgtaaccag ctatggcata ggtgttaacc aaaggctgag taaacatggg 120
tgcctctgag aaatcaaagt cttcatacac t 151

<210> 322
<211> 151
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(151)
<223> n = A,T,C or G

<400> 322

atccagcadc ttctcctgtt tcttgccctc cttttttcttc ttcttasatt ctgcttgagg 60
tttgggcttg gtcagtttgc cacagggctt ggagatgggtg acagtcttct ggcattcggc 120
attgtgcagg gctcgttca nacttccagt t 151

<210> 323
<211> 151
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(151)
<223> n = A,T,C or G

<400> 323

tgaggacttg tkttcttttt ctttattttt aatcctctta ckttgtaaata atattgccta 60
nagactcant tactaccag tttgtgggtt twtgggagaa atgtaactgg acagtttagct 120
gttcaatyaa aaagacactt ancccatgtg g 151

<210> 324
<211> 461
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(461)
 <223> n = A,T,C or G

<400> 324
 acctgtgttg aatttcagct ttctcatgc aaaaggattt tgtatccccg gctacttga 60
 agaagtggc agctaaagga atccagggtg ttggttgac tgtaataacc tttgatgaaa 120
 agagttacta cgaatcccat cttggttcca gctatatcac tgacagcatg gtagaagact 180
 gegaacctca cttctagact ttcacgggtg gacgaaacgg gttcagaaac tgccaggggc 240
 ctcatcacagg gatatacaaaa taccctttgt gctaccagg ccttggggaa tcagggtgact 300
 cacacaaatg caatagttgg tcaactgcatt tttacctgaa ccaaagctaa acccggtgtt 360
 gccaccatgc accatggcat gccagagttc aacactgttg ctcttgaaaa ttgggtctga 420
 aaaaacgcac aagagccctt gccctgccct agctganga c 461

<210> 325
 <211> 400
 <212> DNA
 <213> Homo sapien

<400> 325
 aactgtttc catgttatgt ttctacacat tgctacctca gtgctcctgg aaacttagct 60
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 agtaagagtg gtggcctatt tcagctgctt tgacaaaatg actggctcct gacttaacgt 180
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 gttttgtttt ggactctctg tggctccttc caatgctgtg gggttccaac caggggaagg 300
 gtcccttttg cattgccaaag tgccataacc atgagcacta cgctaccatg gttctgcctc 360
 ctggccaagc aggtctggtt gcaagaatga aatgaatgat 400

<210> 326
 <211> 1215
 <212> DNA
 <213> Homo sapien

<400> 326
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 gttctgctcg ggcgtcctgg tgcacccgca gtgggtgctg tcagccgcac actgtttcca 120
 gaactcctac accatcgggc tgggcctgca cagtcttgag gccgaccaag agccagggag 180
 ccagatgggtg gaggccagcc tctccgtacg gcacccagag tacaacagac ccttgctcgc 240
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 catcagcatt gcttcgcagt gccctaccgc ggggaactct tgccctcgtt ctggctgggg 360
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 cgggtacttg cagggccttg tgtctttcgg aaaagccccg tggggccaag ttggcgtgcc 600
 aggtgtctac accaacctct gcaaattcac tgagtggata gagaaaaccg tccaggccag 660
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 tcaggaatat ctgttccag cccctcctcc ctccaggcca ggagtccagg cccccagccc 780
 ctccctccctc aaaccaaggg tacagatccc cagccctcc tccctcagac ccaggagtcc 840
 agacccccca gccctcctc cctcagaccc aggagtccag cccctcctcc ctccagacca 900
 ggagtccaga ccccccagcc cctcctccct cagacccagg ggtccaggcc cccaaccctt 960
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 acagtgcctt cttgtggcac gttgaccaa ccttaccagt tggtttttca tttttgtcc 1140
 ctttccctta gatccagaaa taaagtctaa gagaagcgca aaaaaaaaaa aaaaaaaaaa 1200
 aaaaaaaaaa aaaaaa 1215

<210> 327
 <211> 220

<212> PRT

<213> Homo sapien

<400> 327

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Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met
 1           5           10           15
Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
          20           25           30
Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
          35           40           45
Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
          50           55           60
Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
65           70           75           80
Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
          85           90           95
Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
          100          105          110
Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
          115          120          125
Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
          130          135          140
Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
145          150          155          160
Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
          165          170          175
Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
          180          185          190
Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
          195          200          205
Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
          210          215          220

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<210> 328

<211> 234

<212> DNA

<213> Homo sapien

<400> 328

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cgctcgtctc tggtagctgc agccaaatca taaacggcga ggactgcagc ccgcactcgc      60
agccctggca ggcggcactg gtcattggaaa acgaattgtt ctgctcgggc gtcctgggtgc      120
atccgcagtg ggtgctgtca gccacacact gtttccagaa ctctacacc atcgggctgg      180
gcctgcacag tcttgaggcc gaccaagagc caggagacca gatggtggag gcca      234

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<210> 329

<211> 77

<212> PRT

<213> Homo sapien

<400> 329

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Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly Glu Asp Cys Ser
 1           5           10           15
Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met Glu Asn Glu Leu
          20           25           30
Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr
          35           40           45
His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu
          50           55           60

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Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala
 65 70 75

<210> 330
 <211> 70
 <212> DNA
 <213> Homo sapien

<400> 330
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 gctgcagcca 70

<210> 331
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 331
 Gln His Asn Gly Pro Ile Pro Ser Leu Thr Pro Pro Ser Gly Ser Leu
 1 5 10 15
 Val Ser Gly Ser Cys Ser
 20

<210> 332
 <211> 2507
 <212> DNA
 <213> Homo sapien

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<212> DNA

<213> Homo sapien

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<212> DNA

<213> Homo sapien

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<212> DNA

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<212> DNA
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<400> 341

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tatttttact	aaccattcta	tttttataga	aatagctgag	agtttctaaa	ccaactctct	120
gctgccttac	aagtattaaa	tattttactt	ctttccataa	agagtagctc	aaaatatgca	180
attaatttaa	taattttctga	tgatggtttt	atctgcagta	atatgtatat	catctattag	240
aatttactta	atgaaaaact	gaagagaaca	aaatttgtaa	ccactagcac	ttaagtactc	300
ctgattctta	acattgtctt	taatgaccac	aagacaacca	acag		344

<210> 342

<211> 592

<212> DNA

<213> Homo sapien

<400> 342

acagcaaaaa	agaaactgag	aagcccaaty	tgctttcttg	ttaacatcca	cttatccaac	60
caatgtggaa	acttcttata	cttggttcca	ttatgaagtt	ggacaattgc	tgctatcaca	120
cctggcagggt	aaaccaatgc	caagagagtg	atggaaacca	ttggcaagac	tttggtgatg	180
accaggattg	gaattttata	aaaatattgt	tgatgggaag	ttgctaaagg	gtgaattact	240
tccctcagaa	gagtgtaaag	aaaagtcaga	gatgctataa	tagcagctat	tttaattggc	300
aagtgccact	gtggaaagag	ttcctgtgtg	tgctgaagtt	ctgaagggca	gtcaaattca	360
tcagcatggg	ctgtttgggtg	caaattgcaa	agcacaggtc	tttttagcat	gctggctctc	420
cccggtgctc	tatgcaaata	atcgtcttct	tctaaatttc	tcctaggctt	cattttccaa	480
agttcttctt	ggtttgat	gtcttttctg	ctttccatta	attctataaa	atagtatggc	540
ttcagccacc	cactcttcgc	cttagcttga	ccgtgagtct	cggctgccgc	tg	592

<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

ttcttgacct	cctcctcctt	caagctcaaa	caccacctcc	cttattcagg	accggcactt	60
cttaatgttt	gtggctttct	ctccagcctc	tcttaggagg	ggtaatgggtg	gagttggcat	120
cttgtaacte	tcctttctcc	tttcttcccc	tttctctgcc	cgcctttccc	atcctgctgt	180
agacttcttg	attgtcagtc	tgtgtcacat	ccagtgattg	ttttggtttc	tgttcccttt	240
ctgactgccc	aaggggctca	gaaccccgagc	aatcccttcc	tttactacc	ttcttttttg	300
ggggtagttg	gaaggggactg	aaattgtggg	gggaaggtag	gaggcacatc	aataaagagg	360
aaaccaccaa	gctgaaaaaa	aa				382

<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

ctgggcctga	agctgtaggg	taaatcagag	gcaggcttct	gagtgatgag	agtcctgaga	60
caataggcca	cataaacttg	gctggatgga	acctcacaat	aagggtggtca	cctcttgttt	120
gtttaggggg	atgccaagga	taaggccagc	tcagttatat	gaagagaagc	agaacaaaca	180
agtctttcag	agaaatggat	gcaatcagag	tgggatcccc	gtcacatcaa	ggtcacactc	240
caccttcctg	tgctgaatg	gttgccagggt	cagaaaaatc	caccccttac	gagtgcgggt	300
tcgacctat	atcccccgcc	cgcgtccctt	tctccataaa	attcttctta	gtagctatta	360
ccttcttatt	atctgatcta	gaaattgccc	tccttttacc	cctaccatga	gccctacaaa	420
caactaacct	gccactaata	gttatgtcat	ccctcttatt	aatcatcatc	ctagccctaa	480
gtctggccta	tgagtgacta	caaaaaggat	tagactgagc	cgaataacaa	aaaaaa	536

<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

acctttttgag gtctctctca ccacctccac agccaccgtc accgtgggat gtgctggatg	60
tgaatgaagc ccccatcttt gtgcctcctg aaaagagagt ggaagtgtcc gaggactttg	120
gcgtgggcca ggaaatcaca tctacactg cccaggagcc agacacattt atggaacaga	180
aaataacata tcggatttgg agagacactg ccaactggct ggagattaat cgggacactg	240
gtgccatttc c	251

<210> 346

<211> 282

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(282)

<223> n = A,T,C or G

<400> 346

cgcgtctctg acactgtgat catgacaggg gttcaaacag aaagtgcctg ggccctcctt	60
ctaagtcttg ttaccaaaaa aaggaaaaag aaaagatctt ctcagttaca aattctggga	120
aggagacta tacctggctc ttgccctaag tgagaggctt tccctccgc accaaaaaat	180
agaaaggctt tctatttcac tggcccagggt agggggaagg agagtaactt tgagtctgtg	240
ggtctcattt cccaaggctc cttcaatgct catnaaaacc aa	282

<210> 347

<211> 201

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(201)

<223> n = A,T,C or G

<400> 347

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taaatataac ttttaaaana ntactancag cttttaccta ngctcctaaa tgcttgtaaa	120
tctgagactg actggaccca cccagaccca gggcaaagat acatgttacc atatcatctt	180
tataaagaat ttttttttgt c	201

<210> 348

<211> 251

<212> DNA

<213> Homo sapien

<400> 348

ctgttaatca caacatttgt gcatcacttg tgccaagtga gaaaatgttc taaaatcaca	60
agagagaaca gtgccagaat gaaactgacc ctaagtccca ggtgcccctg ggcaggcaga	120
aggagacact cccagcatgg aggagggttt atcttttcat cctaggtcag gtctacaatg	180
ggggaagggt ttattataga actcccaaca gccacactca ctccctgccac ccacccgatg	240
gcctgcttc c	251

<210> 349

<211> 251

<212> DNA

<213> Homo sapien

<400> 349

taaaaaatcaa	gccatttaaat	tgtatctttg	aaggtaaaca	atatatggga	gctggatcac	60
aacccttgag	gatgccagag	ctatgggtcc	agaacatggt	gtgggtattat	caacagagtt	120
cagaagggtc	tgaactctac	gtgttaccag	agaacataat	gcaattcatg	cattccactt	180
agcaattttg	taaaatacca	gaaacagacc	ccaagagtct	ttcaagatga	ggaaaattca	240
actcctgggt	t					251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

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agcccgcgcg	gtgaagctcg	ctgctttccc	tacctcctta	agtgactgcc	aaacgcccac	120
cggctggaat	tgctctgggt	atgatgacag	agaaaatgat	ctcttcctct	gtgacaccaa	180
cacctgtaaa	tttgatgggg	aatgtttaag	aattggagac	actgtgactt	gcgtctgtca	240
gttcaagtgc	aacaatgact	atgtgcctgt	gtgtgggtcc	aatggggaga	gctaccagaa	300
tgagtgttac	ctgcgacagg	ctgcatgcaa	acagcagagt	gagatacttg	tggtgtcaga	360
aggatcatgt	gccacagtcc	atgaaggctc	tggagaaact	agtcaaaagg	agacatccac	420
ctgtgatatt	tgccagtttg	gtgcagaatg	tgacgaagat	gccgaggatg	tctgggtgtg	480
gtgtaatat	gactgttttc	aaaccaactt	caatccccct	tgcgcttctg	atgggaaatc	540
ttatgataat	gcatgccaaa	tcaaagaagc	atcgtgtcag	aaacaggaga	aaattgaagt	600
catgtctttg	ggtcgatgtc	aagataacac	aactacaact	actaagtctg	aagatgggca	660
ttatgcaaga	acagattatg	cagagaatgc	taacaaatta	gaagaaagtg	ccagagaaca	720
ccacatacct	tgctcgggaac	attacaatgg	cttctgcatg	catgggaagt	gtgagcattc	780
tatcaatatg	caggagccat	cttgagggtg	tgatgctggt	tatactggac	aacactgtga	840
aaaaaaggac	tacagtgttc	tatacgttgt	tcccggctct	gtacgatttc	agtatgtctt	900
aatcgtag						908

<210> 351

<211> 472

<212> DNA

<213> Homo sapien

<400> 351

ccagttattt	gcaagtggta	agagcctatt	taccataaat	aatactaaga	accaactcaa	60
gtcaaacctt	aatgccattg	ttattgtgaa	ttaggattaa	gtagtaattt	tcaaaattca	120
cattaacttg	attttaaaat	cagwtttgyg	agtcattttac	cacaagctaa	atgtgtacac	180
tatgataaaa	acaaccattg	tattcctgtt	tttctaaaca	gtcctaattt	ctaactctgt	240
atatatcctt	cgacatcaat	gaactttgtt	ttcttttact	ccagtaataa	agtaggcaca	300
gatctgtcca	caacaaactt	gccctctcat	gccttgcttc	tcaccatgct	ctgctccagg	360
tcagccccct	tttgacctgt	ttgttttgtc	aaaaacctaa	tctgcttctt	gcttttcttg	420
gtaatatata	tttaggggaag	atgttgcttt	gccacacac	gaagcaaagt	aa	472

<210> 352

<211> 251

<212> DNA

<213> Homo sapien

<400> 352

ctcaaagcta	atctctcggt	aatcaaacca	gaaaagggca	aggatcttag	gcatgggtgga	60
tgtggataag	gccagggtcaa	tggtgtcaag	catgcagaga	aagaggtaca	tcggagcggtg	120
caggctgcgt	tccgtcctta	cgatgaagac	cacgatgcag	tttccaaaca	ttgccactac	180
atacatggaa	aggaggggga	agccaaccca	gaaatgggct	ttctctaate	ctgggatacc	240
aataagcaca	a					251

<210> 353
 <211> 436
 <212> DNA
 <213> Homo sapien

<400> 353
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 cacattatgg tattattact atactgatta tattttatcat gtgacttcta attaraaaat 120
 gtatccaaaa gcaaaacagc agatatacaa aattaaagag acagaagata gacattaaca 180
 gataaggcaa cttatacatt gacaatccaa atccaatata tttaaacatt tgggaaatga 240
 gggggacaaa tggaagccar atcaaatgtg tgtaaaaacta ttcagtatgt ttcccttgct 300
 tcatgtctga raaggctctc ccttcaatgg ggatgacaaa ctccaaatgc cacacaaatg 360
 ttaacagaat actagattca cactggaacg ggggtaaaga agaaattatt ttctataaaa 420
 gggctcctaa tgtagt 436

<210> 354
 <211> 854
 <212> DNA
 <213> Homo sapien

<400> 354
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 caagtctgaa accaaatcta ggaaacatag gaaacgagcc aggcacaggg ctggtggggc 120
 atcaggggacc accctttggg ttgatatttt gcttaatctg catcttttga gtaagatcat 180
 ctggcagtag aagctgttct ccagggtacat ttctctagct catgtacaaa aacatcctga 240
 aggactttgt caggtgcctt gctaaaagcc agatgcgttc ggcacttctt tggctctgagg 300
 ttaattgcac acctacaggc actgggctca tgctttcaag tattttgtcc tcaactttagg 360
 gtgagtgaag gatccccatt ataggagcac ttgggagaga tcatataaaa gctgactctt 420
 gagtacatgc agtaatgggg tagatgtgtg tgggtgtgtc tcatcctgc aagggtgctt 480
 gttagggagt gtttccagga ggaacaagtc tgaaaccaat catgaaataa atggtagggtg 540
 tgaactggaa aactaattca aaagagagat cgtgatatca gtgtggttga tacaccttg 600
 caatatggaa ggctctaatt tgcccatatt tgaaataata attcagcttt ttgtaataca 660
 aaataacaaa ggattgagaa tcatggtgtc taatgtataa aagacccagg aaacataaat 720
 atatcaactg cataaatgta aaatgcatgt gacccaagaa ggccccaag tggcagacaa 780
 cattgtacc attttccctt ccaaaatgtg agcggcgggc ctgctgcttt caaggctgtc 840
 acacgggatg tcag 854

<210> 355
 <211> 676
 <212> DNA
 <213> Homo sapien

<400> 355
 gaaattaagt atgagctaaa ttcctgttta aaacctctag gggtgacaga tctcttcaac 60
 caggtcaaaag ctgatctttc tggaatgtca ccaaccaagg gcctatatatt atcaaaagcc 120
 atccacaagt catacctgga tgtcagcgaa gagggcacgg aggcagcagc agccactggg 180
 gacagcatcg ctgtaaaaaag cctaccaatg agagctcagt tcaaggcgaa ccaccccttc 240
 ctgttcttta taaggcacac tcataccaac acgatcctat tctgtggcaa gcttgctct 300
 ccctaatacag atggggttga gtaaggctca gagttgcaga tgagggtgcag agacaatcct 360
 gtgactttcc cacggccaaa aagctgttca cacctcacgc acctctgtgc ctgactttgc 420
 tcatctgcaa aatagggtcta ggatttcttc caaccatttc atgagttgtg aagctaaggc 480
 tttgttaatc atggaaaaag gtagacttat gcagaaagcc tttctggctt tcttatctgt 540
 ggtgtctcat ttgagtgtctg tccagtgaca tgatcaagtc aatgagtaaa attttaaggg 600
 attagatttt cttgacttgt atgtatctgt gagatcttga ataagtgacc tgacatctct 660
 gcttaaagaa aaccag 676

<210> 356

<211> 574
 <212> DNA
 <213> Homo sapien

<400> 356
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 catgtggcac ctgactggca tcaaaccaaa gtctgtaggc caacaaagat gggccactca 120
 caagcttccc attttagat ctgagtgcct atgagtatct gacacctgtt cctctcttca 180
 gtctcttagg gaggtctaaa tctgtctcag gtgtgctaag agtgccagcc caaggkggtc 240
 aaaagtccac aaaactgcag tctttgctgg gatagtaagc caagcagtgc ctggacagca 300
 gagttctttt cttgggcaac agataaccag acaggactct aatcgtgctc ttattcaaca 360
 ttcttctgtc tctgctaga ctggaataaa aagccaatct ctctcgtggc acaggggaagg 420
 agatacaagc tctgttacat gtgatagatc taacaaaggc atctaccgaa gtctggtctg 480
 gatagacggc acagggagct cttaggtcag cgctgctggt tggaggacat tcttgagtcc 540
 agctttgcag cctttgtgca acagtacttt ccca 574

<210> 357
 <211> 393
 <212> DNA
 <213> Homo sapien

<400> 357
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 taatatggkg kcttggtcac tatacttaaa aatgcaccac tcataaatat ttaattcagc 120
 aagccacaac caaracttga ttttatcaac aaaaaccctt aaatataaac ggsaaaaaag 180
 atagatataa ttattccagt ttttttaaaa cttaaaarat attccattgc cgaattaara 240
 araarataag tggtatatgg aaagaagggc attcaagcac actaaaraaa cctgaggkaa 300
 gcataatctg tacaaaatta aactgtcctt tttggcattt taacaaattt gcaacgktct 360
 tttttttctt tttctgtttt tttttttttt tac 393

<210> 358
 <211> 630
 <212> DNA
 <213> Homo sapien

<400> 358
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 ttaatgttta taggaaaatg atgagtttat gacaaaggaa gtagatagtg ttttacaaga 120
 gcatagagta ggggaagctaa tccagcacag ggaggtcaca gagacatccc taagggaagt 180
 gagtttaaac tgagagaagc aagtgtctaa actgaaggat gtgttgaaga agaagggaga 240
 gtagaacaat ttgggcagag ggaaccttat agaccctaag gtgggaaggt tcaaagaact 300
 gaaagagagc tagaacagct ggagccgttc tccggtgtaa agaggagtca aagagataag 360
 attaaagatg tgaagattaa gatcttggtg gcattcaggg attggcactt ctacaagaaa 420
 tcaactgaagg gagtaatgtg acattacttt tcaattcagg atggccattc taactccagg 480
 gggtagactg gactaggtaa gactggaggc aggtagacct cttctaaggc ctgcatagat 540
 gaaagacaaa aataagtggg gaaattcagg ggtagtgaa aatcagtagg acttaatgag 600
 caagccagag gttctctcac aacaaccagt 630

<210> 359
 <211> 620
 <212> DNA
 <213> Homo sapien

<400> 359
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 taattaaaaa atgctactaa tatagaaaat ttataatcag aaaaataaat attcaggagg 120
 ctaccagaa gaataaagtg ctctgccagt tattaagga ttactgctgg tgaattaaat 180
 atggcattcc ccaagggaag tagagagatt cttctggatt atgttcaata tttatttcac 240

aggattaact	gttttaggaa	cagatataaa	gcttcgccac	ggaagagatg	gacaaagcac	300
aaagacaaca	tgatacctta	ggaagcaaca	ctaccctttc	aggcataaaa	tttggagaaa	360
tgcaacatta	tgcttcatga	ataatatgta	gaaagaaggt	ctgatgaaa	tgacatcctt	420
aatgttaagat	aactttataa	gaattctggg	tcaaataaaa	ttctttgaag	aaaacatcca	480
aatgtcattg	aottatcaaa	tactatcttg	gcatataacc	tatgaaggca	aaactaaaca	540
aacaaaaagc	tcacaccaaa	caaaaccatc	aacttatttt	gtattctata	acatacgaga	600
ctgtaaagat	gtgacagtgt					620

<210> 360

<211> 431

<212> DNA

<213> Homo sapien

<400> 360

aaaaaaaaaa	agccagaaca	acatgtgata	gataatatga	ttggctgcac	acttccagac	60
tgatgaatga	tgaacgtgat	ggactattgt	atggagcaca	tcttcagcaa	gagggggaaa	120
tactcatcat	ttttggccag	cagttgtttg	atcaccaaac	atcatgccag	aatactcagc	180
aaaccttctt	agctcttgag	aagtcaaaagt	ccgggggaat	ttattcctgg	caattttaat	240
tggactcctt	atgtgagagc	agcggctacc	cagctggggg	ggtggagcga	acccgtcact	300
agtggacatg	cagtggcaga	gtccttggtg	accacctaga	ggaatacaca	ggcacatgtg	360
tgatgccaa	gctgacacct	gtagcactca	aatttgtctt	gtttttgtct	tcgggtgtgt	420
agattcttag	t					431

<210> 361

<211> 351

<212> DNA

<213> Homo sapien

<400> 361

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ttgggtcctc	tggtctcttg	ccaagtttcc	cagccactcg	aggagaaaat	atcgggaggt	180
ttgacttcct	ccggggcttt	cccgagggct	tcaccgtgag	ccctgcggcc	ctcagggctg	240
caatcctgga	ttcaatgtct	gaaacctcgc	tctctgcctg	ctggacttct	gaggcgcgtca	300
ctgccactct	gtcctccagc	tctgacagct	cctcatctgt	ggtcctgttg	t	351

<210> 362

<211> 463

<212> DNA

<213> Homo sapien

<400> 362

acttcatcag	gccataatgg	gtgcctcccg	tgagaatcca	agcacctttg	gactgcgcga	60
tgtagatgag	ccggctgaag	atcttgcgca	tgcgcggctt	cagggcgaag	ttcttggcgc	120
ccccggtcac	agaaatgacc	aggttgggtg	ttttcagggtg	ccagtgtctg	gtcagcagct	180
cgtaaaggat	ttccgcgtcc	gtgtcgcagg	acagacgtat	atacttccct	ttcttcccca	240
gtgtctcaaa	ctgaatatcc	ccaaaggcgt	cggtaggaaa	ttccttgggtg	tgtttcttgt	300
agttccattt	ctcacttttg	ttgatctggg	tgccttccat	gtgctggctc	tgggcatagc	360
cacacttgca	cacattctcc	ctgataagca	cgatgggtgtg	gacaggaagg	aaggatttca	420
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<210> 363

<211> 653

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (653)

<223> n = A,T,C or G

<400> 363

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tgggaggcac	tacgcaagat	gggactgegt	cctgggggtga	gacatcctct	ccttgagat	180
ctaacgaaac	ttctcaccta	tgagttgtaa	agcagaaata	cctgnactac	agacgagtgc	240
ccaacagcaa	ccccccggaa	gtatgagttc	ctctrgggcc	tccgttccta	ccatgagasc	300
tagcaagatg	naagtgttga	gantcattgc	agaggttcag	aaaagagacc	cntcgtgact	360
ggtctgcaca	gttcatggag	gctgcagatg	aggccttgga	tgctctggat	gctgctgcag	420
ctgaggccga	agcccgggct	gaagcaagaa	cccgcattgg	aattggagat	gaggctgtgt	480
ntgggcccctg	gagctgggat	gacattgagt	ttgagctgct	gacctgggat	gaggaaggag	540
atthttggaga	tccntgggtcc	agaattccat	ttaccttctg	ggccagatac	caccagaatg	600
cccgtccag	attccctcag	acctttgccg	gtcccattat	tggtcstggt	ggt	653

<210> 364

<211> 401

<212> DNA

<213> Homo sapien

<400> 364

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aaaacaagg	ggatagatct	agaattgtaa	catttttaaga	aaaccatagc	atthgacaga	180
tgagaaagct	caattataga	tgcaaagtta	taactaaact	actatagtag	taaagaaata	240
catttcacac	ccttcatata	aattcactat	cttggcttga	ggcactccat	aaaatgtatc	300
acgtgcatag	taaatcttta	tatttgctat	ggcgttgcac	tagaggactt	ggactgcaac	360
aagtggatgc	gcggaaaatg	aaatcttctt	caatagccca	g		401

<210> 365

<211> 356

<212> DNA

<213> Homo sapien

<400> 365

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taccagagca	tcaagtctct	gcagcaggtc	attcttgggt	aaagaaatga	cttccacaaa	180
ctctccatcc	cctggctttg	gcttcggcct	tgcgttttcg	gcacatctc	cgtaaatggt	240
gactgtcacg	atgtgtatag	tacagtttga	caagcctggg	tccatacaga	ccgctggaga	300
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<210> 366

<211> 1851

<212> DNA

<213> Homo sapien

<400> 366

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tcacttcctt	taagcctttg	tgactcttcc	tctgatgtca	gctttaagtc	ttgttctgga	180
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caaattacat	gatgatgact	agaaacagca	tactctctgg	ccgtctttcc	agatcttgag	300
aagatacatc	aacattttgc	tcaagtagag	ggctgactat	acttgctgat	ccacaacata	360
cagcaagtat	gagagcagtt	cttccatata	tatccagcgc	atthaaatcc	gcttttttct	420
tgattaaaaa	tttcaccact	tgctgttttt	gctcatgtat	accaagtagc	agtggtgtga	480
ggccatgctt	gtttttttgat	tcgatatacg	caccgtataa	gagcagtgct	ttggccatta	540

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<210> 367

<211> 668

<212> DNA

<213> Homo sapien

<400> 367

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accrtataag	agcagtgcct	tggccattaa	tttatctttc	attttagaca	gcrtagtgya	180
gagtgggtatt	tccatactca	tctggaatat	ttggatcagt	gccatgttcc	agcaacatta	240
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catatcttag	gaattcaaaa	taacattcca	cagctttcac	caactagtta	tatttaaagg	360
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ctactgcata	cctttatcag	agctgtcctc	tttttgttgt	caaggacatt	aagttgacat	480
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gcagtcctat	gagagtgaga	agacttttta	ggaaattgta	gtgcactagc	tacagccata	600
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<210> 368

<211> 1512

<212> DNA

<213> Homo sapien

<400> 368

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tccatgccgg	ctgcttcttc	tgtgaagaag	ccatttggtc	tcaggagcaa	gatgggcaag	300
tgggtgctgcc	gttgcttccc	ctgctgcagg	gagagcggca	agagcaacgt	gggcacttct	360
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actccaagaa	aagttaaaca	tgtttcagtg	aatagagatc	ctgctccttt	ggcaagttcc	1440
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<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

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tccatgccgg	ctgcttcttc	tgtgaagaag	ccatttggtc	tcaggagcaa	gatgggcaag	300
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ggagaccacg	acgactctgc	tatgaagaca	ctcaggagca	agatgggcaa	gtggtgcgcg	420
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<210> 370

<211> 2184

<212> DNA

<213> Homo sapien

<400> 370

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tttcctctga	gaactgcaac	aataaataca	aggatgctgg	attttgtcaa	atgccttttc	180
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<210> 371

<211> 1855

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (1855)

<223> n = A,T,C or G

<400> 371

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<400> 372

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<400> 373

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<210> 374

<211> 2000

<212> DNA

<213> Homo sapien

<400> 374

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gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
aaagaaaaac	agatgctaaa	aatctcttct	gaaaacagca	atccagaaca	agacttaaa	1140
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atgtctcaag	aaccagaaat	aaataaggat	ggtgatagag	aggttgaaga	agaaatgaag	1260
aagcatgaaa	gtaataatgt	gggattacta	gaaaacctga	ctaattgggt	cactgctggc	1320
aatggtgata	atggattaat	tcctcaaagg	aagagcagaa	cacctgaaaa	tcagcaattt	1380
cctgacaacg	aaagtgaaga	gtatcacaga	atttgcgaa	tagtttctga	ctacaaagaa	1440
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tcagaggaag	agtcacaaa	gcttgagggc	agtgaatg	gccagccaga	gctagaaaat	1560
tttatggcta	tcgaagaaat	gaagaagc	ggaagtactc	atgtcggatt	cccagaaaac	1620
ctgactaatg	tgccactg	tggaatgg	gatgatggat	taattcctcc	aaggaagagc	1680
agaacacctg	aaagccagca	atttcctgac	actgagaatg	aagagtatca	cagtgcagaa	1740
caaatgata	ctcagaagca	atgttgta	gaacagaaca	ctggaatatt	acacgatgag	1800
attctgattc	atgaagaaaa	gcagatagaa	gtggttgaaa	aaatgaattc	tgagctttct	1860
cttagttgta	agaaagaaaa	agacatcttg	catgaaaata	gtacgttgcg	ggaagaaatt	1920

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 aaaaaaaaaa aaaaaaaaaa 2000

<210> 375
 <211> 2040
 <212> DNA
 <213> Homo sapien

<400> 375
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 aggagcaaga tgggcaagtg gtgctgccgt tgcttcccct gctgcaggga gagcggcaag 120
 agcaacgtgg gcacttctgg agaccacgac gactctgcta tgaagacact caggagcaag 180
 atgggcaagt ggtgccgcca ctgcttcccc tgctgcaggg ggagtggcaa gagcaacgtg 240
 ggcgcttctg gagaccacga cgactctgct atgaagacac tcaggaacaa gatgggcaag 300
 tgggtgctgcc actgcttccc ctgctgcagg gggagcggga agagcaaggt gggcgcttgg 360
 ggagactacg atgacagtgc cttcatggag ccaggttacc acgtccgtgg agaagatctg 420
 gacaagctcc acagagctgc ctggtggggg aaagtcccca gaaaggatct catcgctatg 480
 ctgagggaca ctgacgtgaa caagaaggac aagcaaaaga ggactgctct acatctggcc 540
 tctgccaatg ggaattcaga agtagtaaaa ctctgctgg acagacgatg tcaacttaat 600
 gtccttgaca acaaaaagag gacagctctg ataaaggccg tacaatgcca ggaagatgaa 660
 tgtgcgttaa tgttgctgga acatggcact gatccaaata ttccagatga gtatggaaat 720
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 tatggtgctg atatcgaaac aaaaaacaag catggcctca caccactgtt acttgggtgta 840
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 aaacagatgc caaaatactc ttctgaaaac agcaaccagc aacaagactt aaagctgaca 1500
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 caagaaccag aaataaataa ggatggtgat agagagctag aaaattttat ggctatcgaa 1620
 gaaatgaaga agcacggaag tactcatgtc ggattcccag aaaacctgac taatgggtgcc 1680
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 aagcaatttt gtgaagaaca gaacactgga atattacacg atgagattct gattactgaa 1860
 gaaaagcaga tagaagtggg tgaaaaaatg aattctgagc tttctcttag ttgtaagaaa 1920
 gaaaaagaca tcttgcataa aaatagtacg ttgcgggaag aaattgccat gctaagactg 1980
 gagctagaca caatgaaca tcagagccag ctaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2040

<210> 376
 <211> 329
 <212> PRT
 <213> Homo sapien

<400> 376
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 1 5 10 15
 Leu His Leu Ala Gly Ser Asp Leu Leu Ser Arg Ser Leu Met Ala Glu
 20 25 30
 Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
 35 40 45
 Leu Asp Gly Gln Gly Glu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
 50 55 60

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Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
65          70          75          80
Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
          85          90          95
Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
          100          105          110
His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
          115          120          125
Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
          130          135          140
Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
145          150          155          160
Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
          165          170          175
Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
          180          185          190
Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
          195          200          205
Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
          210          215          220
Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
225          230          235          240
Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
          245          250          255
Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
          260          265          270
Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
          275          280          285
Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu
290          295          300
Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu
305          310          315          320
Ser Met Leu Phe Leu Val Ile Ile Met
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<210> 377

<211> 148

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(148)

<223> Xaa = Any Amino Acid

<400> 377

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          20          25          30
Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys
          35          40          45
Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu
50          55          60
Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp
65          70          75          80
Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp
          85          90          95

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Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro
 100 105 110
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp
 115 120 125
 Lys Leu Met Ala Lys Ala Leu Leu Tyr Gly Ala Asp Ile Glu Ser
 130 135 140
 Lys Asn Lys Val
 145

<210> 378
 <211> 1719
 <212> PRT
 <213> Homo sapien

<400> 378
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 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His Val

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      340      345      350
Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
      355      360      365
Ser Ser Glu Asn Ser Asn Pro Glu Asn Val Ser Arg Thr Arg Asn Lys
      370      375      380
Pro Arg Thr His Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser
      385      390      395      400
Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys
      405      410      415
Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly
      420      425      430
Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys
      435      440      445
Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly
      450      455      460
Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys
      465      470      475      480
Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys
      485      490      495
Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp
      500      505      510
Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu
      515      520      525
Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp
      530      535      540
Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln
      545      550      555      560
Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val
      565      570      575
Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn
      580      585      590
Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu
      595      600      605
Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp
      610      615      620
Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys
      625      630      635      640
Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys
      645      650      655
Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys
      660      665      670
Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala
      675      680      685
Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly
      690      695      700
Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser
      705      710      715      720
Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser
      725      730      735
His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln
      740      745      750
Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys
      755      760      765
Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser
      770      775      780
Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp
      785      790      795      800
Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly

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1265 1270 1275 1280
 Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr
 1285 1290 1295
 Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp
 1300 1305 1310
 Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val
 1315 1320 1325
 His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala
 1330 1335 1340
 Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala
 1345 1350 1355 1360
 Val Cys Cys Gly Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn
 1365 1370 1375
 Ile Asp Val Ser Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr
 1380 1385 1390
 Ala Val Ser Ser His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr
 1395 1400 1405
 Lys Glu Lys Gln Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu
 1410 1415 1420
 Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly
 1425 1430 1435 1440
 Ser Glu Asn Ser Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn
 1445 1450 1455
 Lys Asp Gly Asp Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser
 1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 1520
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 1600
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 1680
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379
 <211> 656
 <212> PRT
 <213> Homo sapien

<400> 379
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 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415

Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys
 515 520 525
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly
 530 535 540
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser
 545 550 555 560
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr
 565 570 575
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln
 580 585 590
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln
 595 600 605
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys
 610 615 620
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile
 625 630 635 640
 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
 645 650 655

<210> 380
 <211> 671
 <212> PRT
 <213> Homo sapien

<400> 380
 Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
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 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala


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<210> 381
<211> 251
<212> DNA
<213> Homo sapien
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<400> 381						
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ggtaacatgc	ttcccctaag	ggtatcccaa	cccaggggcc	tcaccatgac	ctctgagggg	120
ccaatatccc	aggagaagca	ttggggagtt	gggggcaggt	gaaggaccca	ggactcacac	180
atcctgggcc	tccaaggcag	aggagagggg	cctcaagaag	gtcaggagga	aaatccgtaa	240
caagcagtcg	a					25

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<210> 382
<211> 3279
<212> DNA
<213> Homo sapiens
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caaggatgta tgataatatg tacaaaagtaa ttccaactga ggaagctcac ctgatcctta 2280
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gttttcagac cttaaaaaaa aaaaaaaaaa aaaagtttt 3279

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<210> 383

<211> 154

<212> PRT

<213> Homo sapiens

<400> 383

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Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
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Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
      20                                25                        30

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35                                40                        45

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50                                55                        60

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65                                70                        75                        80

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala
      85                                90                        95

Trp Ala Leu Thr Gln Pro Pro Ser Gln Ser Pro Gly Pro Gln Ser Leu
      100                               105                        110

Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr
      115                               120                        125

Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn
      130                               135                        140

Ala Leu Glu Arg Gly His Leu Val Arg Glu
      145                               150

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<210> 384
 <211> 557
 <212> DNA
 <213> Homo sapiens

<400> 384
 ggatcctcta gagcgccgc ctactactac taaattcgcg gccgcgtcga cgaagaagag 60
 aaagatgtgt tttgttttgg actctctgtg gtcccttcca atgctgtggg tttccaacca 120
 ggggaagggg ccctttttgca ttgccaagtg ccataaccat gagcactact ctaccatggg 180
 tctgcctcct ggccaagcag gctggtttgc aagaatgaaa tgaatgattc tacagctagg 240
 acttaacctt gaaatggaaa gtcttgcaat cccatttgca ggatccgtct gtgcacatgc 300
 ctctgtagag agcagcattc ccagggacct tggaaacagt tggcactgta aggtgcttgc 360
 tcccccaagac acatcctaata aggtgttgta atggtgaaaa cgtcttcctt ctttattgcc 420
 ccttcttatt tatgtgaaca actgtttgtc tttttttgta tcttttttaa actgtaaagt 480
 tcaattgtga aaatgaatat catgcaaata aattatgcga ttttttttcc aaagtaaaaa 540
 aaaaaaaaaa aaaaaaa 557

<210> 385
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 385
 ttcccagggt atgtgcgagg gaagacacat ttactatcct tgatggggct gattccttta 60
 gtttctctag cagcagatgg gttaggagga agtgacccaa gtggttgact cctatgtgca 120
 tctcaaagcc atctgctgtc ttcgagtacg gacacatcat cactcctgca ttgttgatca 180
 aaacgtggag gtgcttttcc tcagctaaga agcccttagc aaaagctcga atagacttag 240
 tatcagacag gtccagtttc cgcaccaaca cctgctggtt cctgtcgtg gtctggatct 300
 ctttggccac caattccccc ttttccacat cccggca 337

<210> 386
 <211> 300
 <212> DNA
 <213> Homo sapiens

<400> 386
 gggcccgtcta cgggcccagg ccccgccctcg cgagtccctc tccccgggtg cctgcccgcga 60
 gcccgctcgg cccagagggg gggcgcgggg ctgcctctac cggctggcgg ctgtaactca 120
 gcgaccttgg cccgaaggct ctagcaagga cccaccgacc ccagccgcgg cggcgggcggc 180
 gcggactttg cccggtgtgt ggggcgggagc ggactgcgtg tccgcggacg ggcagcgaag 240
 atgttagcct tcgctgccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 387
 gggccgagtc gggcaccaag ggactctttg caggcttcct tcctcggatc atcaaggctg 60
 cccctcctg tgccatcatg atcagcacct atgagttcgg caaaagcttc ttccagaggc 120
 tgaaccagga ccggcttctg ggcggtgaa aggggcaagg aggcaaggac cccgtctctc 180
 ccacggatgg ggagagggca ggaggagacc cagccaagtg ccttttcctc agcactgagg 240
 gagggggcctt gtttcccttc cctcccggcg acaagctcca gggcagggct gtccctctgg 300
 gcgggcccagc acttctcag acacaacttc ttctgctgc tccagtctg gggatcatca 360
 cttacccacc ccccaagttc aagaccaaact cttccagctg ccccttcctg gtttccctgt 420
 gtttgctgta gctgggcatg tctccaggaa ccaagaagcc ctcagcctgg ttagtctcc 480
 ctgacccttg ttaattcctt aagtctaaag atgatgaact tcaaaaaaaaa aaaaaaa 537

<210> 388
 <211> 520
 <212> DNA
 <213> Homo sapiens

<400> 388
 aggataattt ttaaaccaat caaatgaaaa aaacaaacaa acaaaaaagg aaatgtcatg 60
 tgagggttaaa ccagtttgca ttcccctaata gtggaaaaaag taagaggact actcagcact 120
 gtttgaagat tgctcttctt acagcttctg agaatttgtt tatttcactt gccaaagtga 180
 ggacccccctc cccaacatgc cccagcccac ccctaagcat ggtcccttgt caccaggcaa 240
 ccaggaaact gctacttgtg gacctcacca gagaccagga gggtttggtt agctcacagg 300
 acttcccccca cccagaaga ttagcatccc atactagact cataactcaac tcaactaggc 360
 tcataactcaa ttgatgggta ttagacaatt ccatttcttt ctgggttatta taaacagaaa 420
 atctttctctc ttctcattac cagtaaaggc tcttggtatc tttctgttgg aatgatttct 480
 atgaacttgt cttattttta tggtggggtt tttttctggt 520

<210> 389
 <211> 365
 <212> DNA
 <213> Homo sapiens

<400> 389
 cgttgccccg gtttgacaga aggaaaggcg gagcttattc aaagtctaga gggagtggag 60
 gagttaaggc tggatttcag atctgcctgg ttccagccgc agtgtgccct ctgctcccc 120
 aacgactttc caaataatct caccagcgcc ttccagctca ggcgctcctag aagcgtcttg 180
 aagcctatgg ccagctgtct ttgtgttccc tctcacccgc ctgtcctcac agctgagact 240
 cccaggaaac cttcagacta ccttcctctg ccttcagcaa ggggcgttgc ccacattctc 300
 tgagggtcag tggaagaacc tagactccca ttgctagagg tagaaagggg aagggtgctg 360
 gggag 365

<210> 390
 <211> 221
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(221)
 <223> n = A,T,C or G

<400> 390
 tgctcttcca tcttgcccc gacttctctg tcaggaaagt ggggatggac cccatctgca 60
 tacacggntt ctcatgggtg tggaacatct ctgcttgagg tttcaggaag gcctctggct 120
 gctctangag tctgancnga ntcgttgccc cantntgaca naaggaaagg cggagcttat 180
 tcaaagtcta gagggagtgg aggagtttaag gctggatttc a 221

<210> 391
 <211> 325
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(325)
 <223> n = A,T,C or G

<400> 391


```

tggagcaggt cccgaggcct ccctagagcc tggggccgac tctgtgncga tgcangcttt 60
ctctcgcgcc cagcctggag ctgctcctgg catctacca caatcagncg aggcgagcag 120
tagccagggc actgctgcca acagccagtc cnnataccat catgtnaccc ggtgngctct 180
naanttngat ntccanagcc ctaccccatn tagttctgct ctcccaccgg ntaccagccc 240
cactgcccag gaatccctaca gccagtaccc tgtcccagcg tctctaccta ccagtacgat 300
gagacctccg gctactacta tgacc 325

```

<210> 392

<211> 277

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(277)

<223> n = A,T,C or G

<400> 392

```

atattgttta actccttccct ttatatcttt taacattttc atggngaaaag gttcacatct 60
agtctcactt nggcnagnngn ctctactctg agtctcttcc ccggcctggn ccagtnagnaa 120
antaccanga accgncatgn cttanaaach ncctggtttn tgggttnntc aatgactgca 180
tgcagtgcac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtgggcgg 240
ctgaggatac agcgccgcgt cctgtgttgc tggggaa 277

```

<210> 393

<211> 566

<212> DNA

<213> Homo sapiens

<400> 393

```

actagtccag tgtggtggaa ttgcgggccg cgtcgacgga caggtcagct gtctggetca 60
gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga ttaaattcag cctaaacggt 120
ttgccgggaa cactgcagag acaatgctgt gagtttccaa ccttagccca tctgcgggca 180
gagaaggctc agtttgtcca tcagcattat catgatata ggactgggta cttgggttaag 240
gaggggtcta ggagatctgt ccctttttaga gacacettac ttataatgaa gtatttggga 300
gggtgggttt caaaagtaga aatgtcctgt attccgatga tcacctctga aacattttat 360
catttattaa tcacccctgc ctgtgtctat tattatattc atatctctac gctggaaaact 420
ttctgcctca atgtttactg tgcccttgtt tttgctagtt tgtgttgttg aaaaaaaaaa 480
cattctctgc ctgagtttta atttttgtcc aaagttattt taatctatac aattaaaagc 540
ttttgcctat caaaaaaaaa aaaaaa 566

```

<210> 394

<211> 384

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(384)

<223> n = A,T,C or G

<400> 394

```

gaacatacat gtcccggcac ctgagctgca gtctgacatc atcgccatca cgggcctcgc 60
tgcaaattng gaccgggcca aggctggact gctggagcgt gtgaaggagc tacaggccna 120
gcaggaggac cgggctttta ggagttttta gctgagtgtc actgtagacc ccaaatacca 180
tcccaagatt atcgggagaa agggggcagt aattacccaa atccggttgg agcatgacgt 240
gaacatccag tttcctgata aggacgatgg gaaccagccc caggaccaaa ttaccatcac 300
agggtacgaa aagaacacag aagctgccag ggatgctata ctgagaattg tgggtgaact 360

```

tgagcagatg gtttctgagg acgt

384

<210> 395

<211> 399

<212> DNA

<213> Homo sapiens

<400> 395

```
ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtgac 60
tctgaccttg gactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
tatcagaggt ttcattcattg cggaaattgt ggagtctaag gaaatcatgg cctctgaagt 180
attcacgtct ttccagtacc ctgagttctc tatagagttg cctaacacag gcagaattgg 240
ccagctactt gtctgcaatt gtatcttcaa gaataccctg gccatccctt tgactgacgt 300
caagttctct ttggaaagcc tgggcatctc ctcaactacag acctctgacc atgggacggg 360
gcagcctggg gagaccatcc aatcccaaat aaaatgcac 399
```

<210> 396

<211> 403

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(403)

<223> n = A,T,C or G

<400> 396

```
tggagttntc agtgcaaaaca agccataaag cttcagtagc aaattactgt ctcacagaaa 60
gacattttca acttctgctc cagctgctga taaaacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggaggt gttagtagat 180
actaaaaaaaa gtggatgaat aatctggata ttttccctaa aaagattcct tgaaacacat 240
taggaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
gtttagggga gggagtgagg gataaaagaa ggaaaaaaag aagagtgaga aaacctattt 360
atcaaagcag gtgctatcac tcaatgtagg gccctgctct ttt 403
```

<210> 397

<211> 100

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(100)

<223> n = A,T,C or G

<400> 397

```
actagtnacg tgtgggtggaa ttgcgggccc cgctgacctc naanccatct ctatagcaaa 60
tccatccccg ctcttggttg gtnacagaat gactgacaaa 100
```

<210> 398

<211> 278

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 398
gcggccgcgt cgacagcagt tccgccagcg ctccgccctg ggtggggatg tgctgcacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaagag cggacttcac ctggggcgat 120
tcactactgt gcctcgacca gtgaggagag ctggaccgac agcgaggtag actcatcatg 180
ctccgggcag cccatccacc tgtggcagtt cctcaaggag ttgctactca agccccacag 240
ctatggccgc ttcattangt ggctcaacaa ggagaagg 278

<210> 399
<211> 298
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(298)
<223> n = A,T,C or G

<400> 399
acggaggtgg aggaagcgc cctgggatcg anaggatggg tcctgncatt gaccnecten 60
ggggtgcccng catggagcgc atggggcgcgg gcctggggcca cggcatggat cgcgtgggct 120
ccgagatcga gcgcattgggc ctgggtcatgg accgcatggg ctccgtggag cgcattgggt 180
ccggcattga gcgcattgggc ccgctggggc tcgaccacat ggccctccanc attgancgca 240
tgggccagac catggagcgc attggctctg gcgtggagcn catgggtgcc ggcattggg 298

<210> 400
<211> 548
<212> DNA
<213> Homo sapiens

<400> 400
acatcaacta cttcctcatt ttaaggtatg gcagttccct tcctccctt ttctgcctt 60
gtacatgtac atgtatgaaa tttccttctc ttaccgaact ctctccacac atcacaagg 120
caaagaacca cacgcttaga agggtaagag ggcaccctat gaaatgaaat ggtgatttct 180
tgagtctctt ttttccacgt ttaaggggccc atggcaggac ttagagttgc gagttaagac 240
tgcagagggc tagagaatta tttcatacag gctttgaggc caccatgtc acttatcccc 300
tataccctct caccatcccc ttgtctactc tgatgcccc aagatgcaac tgggcagcta 360
gttggcccca taattctggg cctttgttgt ttgttttaat tacttgggca tcccaggaag 420
ctttccagtg atctcctacc atggggcccc ctccctgggag caagccccctc ccaggccctg 480
tccccagccc ctctgcccc agcccaccg cttgccttgg tgctcagccc tcccattggg 540
agcaggtt 548

<210> 401
<211> 355
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(355)
<223> n = A,T,C or G

<400> 401
actgtttcca tggtatgttt ctacacattg ctacctcagt gctcctggaa acttagcttt 60
tgatgtctcc aagtagtcca cttcattta actctttgaa actgtatcat ctttgccaag 120
taagagtggg ggcctatttc agctgctttg acaaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtgtgaag caaagtggcc atgggtggcg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnngg tttccaacca ggggaagggt 300

cccttttgc^a ttgccaaagtg ccataacccat gagcactact ctaccatggn tctgc 355

<210> 402

<211> 407

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(407)

<223> n = A,T,C or G

<400> 402

```
atggggcaag ctggataaag aaccaagacc cactggagta tgctgtcttc aagaaaccca 60
tctcacatgc ggtggcatat ataggctcaa aataaaggaa tggagaaaaa tatttcaagc 120
aaatggaaaa cagaaaaaag cagggtgttc actcctactt tctgacaaaa cagactatgc 180
gaataaagat aaaaaagaga aggacattac aaaggtggtc ctgacctttg ataaatctca 240
ttgcttgata ccaacctggg ctgttttaat tgcccaaacc aaaaggataa tttgctgagg 300
ttgtggagct tctccctgc agagagtccc tgatctccca aaatttggtt gagatgtaag 360
gntgattttg ctgacaactc cttttctgaa gttttactca tttccaa 407
```

<210> 403

<211> 303

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(303)

<223> n = A,T,C or G

<400> 403

```
cagtatttat agccnaactg aaaagctagt agcaggcaag tctcaaatec aggcacccaa 60
tcctaagcaa gagccatggc atggtgaaaa tgcaaaagga gagtctggcc aatctacaaa 120
tagagaacaa gacctactca gtcataaaca aaaaggcaga caccaacatg gatctcatgg 180
gggattggat attgtaatta tagagcagga agatgacagt gatcgtcatt tggcacaaca 240
tcttaacaac gaccgaaacc cattattttac ataaacctcc attcggtaac catgttgaaa 300
gga 303
```

<210> 404

<211> 225

<212> DNA

<213> Homo sapiens

<400> 404

```
aagtgttaact tttaaaaatt tagtggattt tgaaaattct tagaggaaag taaaggaaaa 60
attgttaatg cactcattta cctttacatg gtgaaagtct tctcttgatc ctacaaacag 120
acattttcca ctctgttttc catagtgtt aagtgtatca gatgtgttgg gcatgtgaat 180
ctccaagtgc ctgtgtaata aataaagtat ctttatttca ttcatt 225
```

<210> 405

<211> 334

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(334)

<223> n = A,T,C or G

<400> 405

```
gagctgttat actgtgagtt ctactaggaa atcatcaaat ctgagggttg tctggaggac 60
ttcaatacac ctccccccat agtgaatcag cttccagggg gtccagtccc tctccttact 120
tcatccccat cccatgccaa aggaagaccc tccctccttg gctcacagcc ttctctaggc 180
ttcccagtcg ctccaggaca gagtgggtta tgttttcagc tccatccttg ctgtgagtgt 240
ctggtgcggt tgtgcctcca gcttctgctc agtgcttcat ggacagtgtc cagcccatgt 300
cactctccac tctctcanng tggatccac ccct 334
```

<210> 406

<211> 216

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(216)

<223> n = A,T,C or G

<400> 406

```
tttcatacct aatgagggag ttganatnac atnnaaccag gaaatgcatg gatctcaang 60
gaaacaaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcacttgct 120
acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180
actgccaaag aatnttcaag aaggaggact gccant 216
```

<210> 407

<211> 413

<212> DNA

<213> Homo sapiens

<400> 407

```
gctgacttgc tagtatcatc tgcattcatt gaagcacaag aacttcatgc cttgactcat 60
gtaaatgcaa taggattaaa aaataaattt gatatcacat ggaaacagac aaaaaatatt 120
gtacaacatt gcacccagtg tcagatteta cacctggcca ctgaggaagc aagagttaat 180
cccagaggtc tatgtcctaa tgtgttatgg caaatggatg tcatgcacgt accttcattt 240
ggaaaattgt catttgtcca tgtgacagtt gatacttatt cacatttcat atgggcaacc 300
tgccagacag gagaaagtct tcccatgtta aaagacattt attatcttgt tttcctgtca 360
tgggagttcc agaaaaagtt aaaacagaca atgggccagg ttctgtagta aag 413
```

<210> 408

<211> 183

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(183)

<223> n = A,T,C or G

<400> 408

```
ggagctngcc ctcaattcct ccatntctat gttancatat ttaatgtctt ttggnattaa 60
tncttaacta gttaatcctt aaagggctan ntaatcctta actagtcctt ccattgtgag 120
cattatcctt ccagtattcn ccttctnttt tatttactcc ttctgggcta cccatgtact 180
ntt 183
```

<210> 409

<211> 250

<212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(250)
 <223> n = A,T,C or G

<400> 409
 cccacgcatg ataagctctt tatttctgta agtcctgcta ggaaatcatc aaatctgacg 60
 gtgggtttggg ggacctgaac aaacctcctg taattaatca gctttcagtt tctcccccta 120
 gtccctcctt caacaacata ggaggatcct ccccttcttt ctgctcacgg ccttatctag 180
 gcttcccagt gccccagga cagcgtgggc tatgtttaca gcgctcctt gctggggggg 240
 ggcntatgc 250

<210> 410
 <211> 306
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(306)
 <223> n = A,T,C or G

<400> 410
 ggctgggttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60
 agtcttgcaa tcccatattgc aggatccgtc tgtgcacatg cctctgtaga gagcagcatt 120
 cccagggacc ttggaaacag ttggcactgt aagggtgctt ctcccccaaga cacatcctaa 180
 aagggtgttg aatggtgaaa accgcttctt tctttattgc cccttcttat ttatgtgaac 240
 nactgggttg ctttttttgn atctttttta aactggaaaag ttcaattgng aaaatgaata 300
 tcntgc 306

<210> 411
 <211> 261
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(261)
 <223> n = A,T,C or G

<400> 411
 agagatattn cttaggtnaa agttcataga gttcccatga actatatgac tggccacaca 60
 g gatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
 tttaaatgtc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
 aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
 cttctctcaa ggngaggcaa a 261

<210> 412
 <211> 241
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(241)

<223> n = A,T,C or G

<400> 412

```
gttcaatggt acctgacatt tctacaacac ccactcacc gatgtattcg ttgcccagtg 60
ggaacatacc agcctgaatt tggaaaaaat aattgtgttt cttgcccagg aaatactacg 120
actgactttg atggctccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180
ctgggagatt tctactgggta cattgaattc ccaaactacc cangcaatta cccagccaac 240
a                                                                 241
```

<210> 413

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(231)

<223> n = A,T,C or G

<400> 413

```
aactcttaca atccaagtga ctcatctgtg tgcttgaatc ctttccactg tctcatctcc 60
ctcatccaag tttctagtac cttctctttg ttgtgaagga taatcaaact gaacaacaaa 120
aagtttactc tctctatttg gaacctaaaa actctcttct tcttgggtct gagggctcca 180
agaatccttg aatcanttct cagatcattg gggacaccan atcaggaacc t          231
```

<210> 414

<211> 234

<212> DNA

<213> Homo sapiens

<400> 414

```
actgtccatg aagcactgag cagaagctgg aggcacaacg caccagacac tcacagcaag 60
gatggagctg aaaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
gtgagccaag gagggagggt cttccttttg catgggatgg ggatgaagta aggagaggga 180
ctggaccccc tgggaagctga ttcactatgg ggggaggtgt attgaagtcc tcca      234
```

<210> 415

<211> 217

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(217)

<223> n = A,T,C or G

<400> 415

```
gcataggatt aagactgagt atcttttcta cattctttta acttttctaag gggcacttct 60
caaaacacag accaggtagc aaatctccac tgctctaagg ntctcaccac cacttttctca 120
cacctagcaa tagtagaatt cagtcctact tctgaggcca gaagaatggt tcagaaaaat 180
antggattat aaaaaataac aattaagaaa aataatc                    217
```

<210> 416

<211> 213

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
<222> (1)...(213)
<223> n = A,T,C or G

<400> 416
atgcataatnt aaagganact gcctcgcttt tagaagacat ctggncgtgt ctctgcatga 60
ggcacagcag taaagctctt tgattcccag aatcaagaac tctccccttc agactattac 120
cgaatgcaag gtggttaatt gaaggccact aattgatgtc caaatagaag gatattgact 180
atattggaac agatggagtc tctactacaa aag 213

<210> 417
<211> 303
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

<400> 417
nagtcttcag gcccatcagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60
gtgggaaagg ctttactctg agttcaaadc ttcaagccca tcagagagtc cacactggag 120
agaagccata caaatgcaat gagtgtggga agagcttcag gagggattcc cattatcaag 180
ttcatctagt ggtccacaca ggagagaaac cctataaatg tgagatatgt gggaagggct 240
tcantcaaag ttcgtatctt caaatccatc ngaaggncca cagtatanan aaacctttta 300
agt 303

<210> 418
<211> 328
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

<400> 418
tttttgccgg tgggtggggca gggacggggac angagtctca ctctgttgcc caggctggag 60
tgcacaggca tgatctcggc tcaactacaac cctgcctcc catgtccaag cgattcttgt 120
gcctcagcct tcctgttagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
gtatttttag tagagacagg gtttcaccat gttggccagg ctggtctcaa actcctnacc 240
tcagnngtca ggctgggtct aaactcctga cctcaagtga tctgcccacc tcagcctccc 300
aaagtgtan gattacaggc cgtgagcc 328

<210> 419
<211> 389
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(389)
<223> n = A,T,C or G

<400> 419
cctcctcaag acggcctgtg gtccgcctcc eggcaaccaa gaagcctgca gtgccatatg 60


```

acccttgagc catggactgg agcctgaaag gcagcgtaca ccttgctcct gatcttgctg 120
cttgtttctc ctctgtggct ccattcatag cacagttggt gcaactgaggc ttgtgcaggc 180
cgagcaaggc caagctggct caaagagcaa ccagtcaact ctgccacggg gtgccaggca 240
ccggttctcc agccaccaac ctcaactcgt cccgcaaata gcacatcagt tcttctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtcct ctgctctatc agccatcacg 360
tggcagccac tcnggctgtg tcgacgcgg 389

```

<210> 420

<211> 408

<212> DNA

<213> Homo sapiens

<400> 420

```

gttcctccta actcctgcc aaacagctc tctcaacat gagagctgca cccctcctcc 60
tgccagggc agcaagcctt agccttggt tctgtttct gcttttttcc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcattggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtcctata aacatgaaca gggttatatt cgaagcacag 360
acgttgaccg gactttgatg aagtgtatg acaaacctgg caagcccg 408

```

<210> 421

<211> 352

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (352)

<223> n = A,T,C or G

<400> 421

```

gctcaaaaat ctttttactg atnngcatgg ctacacaatc attgactatt acggaggcca 60
gaggagaatg aggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120
ttcactgaca gaacaggtct tttttgggtc cttcttctcc accacnatac attgcagtc 180
ctccttcttg aagattcttt ggcagttgtc tttgtcataa cccacagggt tagaaacaag 240
gggtgcaaat gaaatttctg tttcgtagca agtgcatgtc tcacaagttg gcangtctgc 300
cactccgagt ttattgggtg tttgtttcct ttgagatcca tgcatttctc gg 352

```

<210> 422

<211> 337

<212> DNA

<213> Homo sapiens

<400> 422

```

atgccaccat gctggcaatg cagcggggcg tcgaaggcct gcataatccag cccaagctgg 60
cgatgatcga cggcaaccgt tgcccgaagt tgccgatgcc agccgaagcg gtggtcaagg 120
gcatagcaa ggtgccggcg atcgcgggcg cgtcaatcct ggccaaggct agccgtgatc 180
gtgaaatggc agctgtcgaa ttgatctacc cgggttatgg catcgggcgg cataagggct 240
atccgacacc ggtgcacctg gaagccttgc agcggtggg gccgacgccg attcaccgac 300
gcttcttccg ccggtacggc tggcctatga aaattat 337

```

<210> 423

<211> 310

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
 <222> (1)...(310)
 <223> n = A,T,C or G

<400> 423
 gctcaaaaat ctttttactg atatggcatg gctacacaat cattgactat tagaggccag 60
 aggagaatga ggcctggcct gggagccctg tgcctactan aagcncatta gattatccat 120
 tcaactgacag aacaggtctt ttttgggtcc ttcttctcca ccacgatata cttgcagtc 180
 tccttcttga agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240
 gtgcaacatg aaatttctgt ttcgtagcaa gtgcatgtct cacagttgtc aagtctgccc 300
 tccgagttta 310

<210> 424
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(370)
 <223> n = A,T,C or G

<400> 424
 gctcaaaaat ctttttactg ataggcatgg ctacacaatc attgactatt agaggccaga 60
 ggagaatgag gcctggcctg ggagccctgt gcctactaga agcacattag attatccatt 120
 cactgacaga acaggtcttt tttgggtcct tcttctccac cacgatatac ttgcagtcct 180
 ccttcttgaa gattcttttg cagttgtctt tgtcataacc cacaggtgta gaaacatcct 240
 ggttgaatct cctggaactc cctcattagg tatgaaatag catgatgcat tgcataaagt 300
 cacgaagggtg gcaaagatca caacgctgcc cagganaaca ttcattgtga taagcaggac 360
 tccgtcgacg 370

<210> 425
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n = A,T,C or G

<400> 425
 aattgctatn ntattttttg ccaactcaaaa taattacca aaaaaaaaaa tnttaaatga 60
 taacaacnca acatcaagg aaananaaca ggaatggntg actntgcata aatnggccga 120
 anattatcca ttatnttaag ggttgacttc agntacagc acacagacaa acatgcccag 180
 gaggnntnca ggaccgctcg atgtntntg agggag 216

<210> 426
 <211> 596
 <212> DNA
 <213> Homo sapiens

<400> 426
 cttccagtga ggataaccct gttgccccgg gccgaggttc tccattaggc tctgattgat 60
 tggcagtcag tgatggaagg gtgttctgat cattccgact gcccgaaggg tcgctggcca 120
 gctctctgtt ttgctgagtt ggcagtagga cctaatttgt taattaagag tagatgggtga 180
 gctgtccttg tattttgatt aacctaatgg ccttcccagc acgactcgga ttcagctgga 240
 gacatcacgg caacttttaa tgaaatgatt tgaagggccca ttaagaggca cttcccgtta 300

ttaggcagtt catctgcact gataacttct tggcagctga gctggtcgga gctgtggccc 360
aaacgcacac ttggcttttg gttttgagat acaactctta atcttttagt catgcttgag 420
ggtggatggc cttttcagct ttaacccaat ttgcaactgcc ttggaagtgt agccaggaga 480
atacactcat atactcgtgg gcttagaggc cacagcagat gtcattgggc tactgcctga 540
gtcccgcgtgg tcccatccca ggaccttcca tcggcgagta cctggggagcc cgtgct 596

<210> 427

<211> 107

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(107)

<223> n = A,T,C or G

<400> 427

gaagaattca agttaggttt attcaaaggg cttacngaga atcctanacc caggncccag 60
ccggggagca gccttanaga gctcctgttt gactgcccgg ctcagng 107

<210> 428

<211> 38

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(38)

<223> n = A,T,C or G

<400> 428

gaacttcena anaangactt tattcactat ttacatt 38

<210> 429

<211> 544

<212> DNA

<213> Homo sapiens

<400> 429

ctttgctgga cggaataaaa gtggacgcaa gcatgacctc ctgatgaggg cgctgcattt 60
attgaagagc ggctgcagcc ctgcggttca gattaaaatc cgagaattgt atagacgccg 120
atatccacga actcttgaag gactttctga tttatccaca atcaaatcat cgggttttcag 180
tttggatggt ggctcatcac ctgtagaacc tgacttggcc gtggctggaa tccactcgtt 240
gccttccact tcagttacac ctcaactcacc atcctctcct gttgggttctg tgctgcttca 300
agatactaag cccacatttg agatgcagca gccatctccc ccaattctc ctgtccatcc 360
tgatgtgcag ttaaaaaatc tgccctttta tgatgtcctt gatgttctca tcaagcccac 420
gagtttagtt caaagcagta ttcagcgatt tcaagagaag ttttttattt ttgctttgac 480
acctcaaca gtttagagaga tatgcatatc cagggatttt ttgccagggt gtaggagaga 540
ttat 544

<210> 430

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(507)

<223> n = A,T,C or G

<400> 430

```

cttatcncaa tggggctccc aaacttggtc gtgcagtgga aactccgggg gaattttgaa 60
gaacactgac acccatcttc caccgcgaca ctctgattta attgggctgc agtgagaaca 120
gagcatcaat ttaaaaagct gcccgagaatg ttntcctggg cagcgttggt atctttgccn 180
ccttcgtgac tttatgcaat gcatcatgct atttcatacc taatgaggga gttccaggag 240
attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300
caagaaggag gactgcaagt atatcgtggg ggagaagaag gacccaaaaa agacctgttc 360
tgtcagtgaa tggataatct aatgtgcttc tagtaggcac agggctccca ggccaggcct 420
cattctcttc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaagat 480
ttttgagcaa aaaaaaaaaa aaaaaaa 507

```

<210> 431

<211> 392

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 431

```

gaaaattcag aatggataaa aacaaatgaa gtacaaaata tttcagattt acatagcgat 60
aaacaagaaa gcacttatca ggaggactta caaatggaag tacactctan aaccatcatc 120
tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180
aagagatggg aaacaaaatc ccaggagttt tgtgtgtgga gtccctgggt ttccaacaga 240
catcattcca gcattctgag attagggnga ttggggatca ttctggagtt ggaatgttca 300
acaaaagtga tgttggttagg taaaatgtac aacttctgga tctatgcaga cattgaaggt 360
gcaatgagtc tggcttttac tctgctgttt ct 392

```

<210> 432

<211> 387

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(387)

<223> n = A,T,C or G

<400> 432

```

ggtatcanta cataatcaaa tatagctgta gtacatgttt tcattggngt agattaccac 60
aaatgcaagg caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg 120
ngtagtccaa gctctcgnga gtccagccac tngaaacat gtcctcttta gattaacctc 180
gtggacnctn ttgttgnatt gtctgaactg tagngccctg tattttgctt ctgtctgnga 240
attctgttgc ttctggggca tttccttgng atgcagagga ccaccacaca gatgacagca 300
atctgaattg ntccaatcac agctgcgatt aagacatact gaaatcgtac aggaccggga 360
acaacgtata gaacactgga gtccttt 387

```

<210> 433

<211> 281

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(281)

<223> n = A,T,C or G

<400> 433

```

ttcaactagc anagaanact gcttcagggg gtgtaaaatg aaagggttcc acgcagttat 60
ctgattaaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tacactatag 120
caggcnctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180
atcgccgtgg ctattcctcn ttgntattac accagnagg ntctctgtnt gccactggg 240
tnnaaaaccg ntatacaata atgatagaat aggacacaca t 281

```

<210> 434

<211> 484

<212> DNA

<213> Homo sapiens

<400> 434

```

ttttaaaata agcatttagt gctcagtcct tactgagtac tctttctctc cctcctctg 60
aatttaattc tttcaacttg caatttgcaa ggattacaca tttcactgtg atgtatattg 120
tggtgcaaaa aaaaaaaagt gtctttgttt aaaattactt gggttggtgaa tccatcttgc 180
tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa acatctgaag 240
agctagtcta tcagcatctg acagggtgaat tggatgggtc tcagaacccat ttcacccaga 300
cagcctgttt ctatcctgtt taataaatta gtttggttgc tctacatgca taacaaaccc 360
tgctccaatc tgtcacataa aagtctgtga cttgaagttt agtcagcacc cccaccaaac 420
tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag taccatgtc 480
ttaa 484

```

<210> 435

<211> 424

<212> DNA

<213> Homo sapiens

<400> 435

```

gcgcgctca gagcagggtca ctttctgcct tccacgtcct ccttcaagga agccccatgt 60
gggtagcttt caatategca gggtcttact cctctgcctc tataagctca aaccaccaa 120
cgatcgggca agtaaacccc ctccctcgcc gacttcggaa ctggcgagag ttcagcgag 180
atgggcctgt ggggaggggg caagatagat gagggggagc ggcaggtgtc ggggtgacct 240
cttgagagaga ggaaaaaggc cacaagaggg gctgccaccg cactaacgg agatggccct 300
ggtagagacc tttgggggtc tggaacctct ggactcccca tgctctaaact cccacactct 360
gctatcagaa acttaaacctt gaggattttc tctgtttttc actcgcaata aattcagagc 420
aaac 424

```

<210> 436

<211> 667

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(667)

<223> n = A,T,C or G

<400> 436

```

accttgggaa nactctcaca atataaaggg tcgtagactt tactccaaat tccaaaaagg 60
tcttgcccat gtaatcctga aagttttccc aaggtagcta taaaatcctt ataaggggtg 120
agcctcttct ggaattcctc tgatttcaaa gtctcactct caagttcttg aaaacgaggg 180
cagttcctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240
atgggctgcc agagtaggat aggattccag atgctgacac cttctggggg aaacagggct 300
gccaggtttg tcatagcact catcaaagtc cgggtcaacgt ctgtgcttcg aatataaacc 360

```

```

tgttcatgtt tataggactc attcaagaat tttctatatc tctttcttat atactctcca 420
agttcataat gctgctccat gccagctgg gtgagttggc caaatccttg tggccatgag 480
gattccttta tggggtcagt gggaaaggtg tcaatgggac ttcggtctcc atgccgaaac 540
accaaagtca caaacttcaa ctccttggct agtacacttc ggtctagcca gaaaaaaagc 600
agaaacaaga agccaaggct aaggcttgct gccctgccag gaggaggggt gcagctctca 660
tgttgag 667

```

<210> 437

<211> 693

<212> DNA

<213> Homo sapiens

<400> 437

```

ctacgtctca accctcattt ttaggtaagg aatcttaagt ccaaagatat taagtgactc 60
acacagccag gtaaggaaaag ctggattggc aactaggac tctaccatac cgggttttgt 120
taaagctcag gttaggaggc tgataagctt ggaaggaaact tcagacagct ttttcagatc 180
ataaaagata attcttagcc catgttcttc tccagagcag acctgaaatg acagcacagc 240
aggtactcct ctattttcac ccctcttgct tctactctct ggcagtcaga cctgtgggag 300
gccatgggag aaagcagctc tctggatgtt tgtacagatc atggactatt ctctgtggac 360
catttctcca ggttacccta ggtgtcacta ttgggggggac agccagcatc tttagctttc 420
atttgagttt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tcacatctga 480
acacctaact gctgttgctc ctgaggtggt gaaagacaga tatagagctt acagtattta 540
tcctatttct aggcaactgag ggctgtgggg taccttgtgg tgccaaaaca gatcctgttt 600
taaggacatg ttgcttcaga gatgtctgta actatctggg ggctctgttg gctctttacc 660
ctgcatcatg tgctctcttg gctgaaaatg acc 693

```

<210> 438

<211> 360

<212> DNA

<213> Homo sapiens

<400> 438

```

ctgcttatca caatgaatgt tctcctgggc agcgttgtga tctttgccac ctctgtgact 60
ttatgcaatg catcatgcta tttcatacct aatgagggag ttccaggaga ttcaaccagg 120
atgtttctac acctgtgggt tatgacaaag acaactgcc aagaatcttc aagaaggagg 180
actgcaagta tatctgtgtg agaagaagga cccaaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgcttcta gtaggcacag ggctcccagg ccaggcctca ttctcctctg 300
gcctctaata gtcaataatt gtgtagccat gcctatcagt aaaaagattt ttgagcaaac 360

```

<210> 439

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(431)

<223> n = A,T,C or G

<400> 439

```

gttcctnnta actcctgcc a gaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gcttttttct tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggg gtttcggcat ggagaccgaa 180
gtccattga cacttttccc actgaccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag t 431

```

<210> 440
<211> 523
<212> DNA
<213> Homo sapiens

<400> 440
agagataaag cttagggtcaa agttcataga gtcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaagtgc tgaaatggaa cagatttcaa aaaaaaacc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc 300
actggaaaac tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac 360
taaaaattaa aacctctttg tgtcccttgg tcctggaaaca tttatgttcc ttttaaagaa 420
acaaaaatca aactttacag aaagatttga tgtatgtaat acatatagca gctcttgaag 480
tatatatatc atagcaaata agtcatctga tgagaacaag cta 523

<210> 441
<211> 430
<212> DNA
<213> Homo sapiens

<400> 441
gttcctccta actcctgcc aaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggtc tctgtttct gcttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtgtg tgactttggt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag 430

<210> 442
<211> 362
<212> DNA
<213> Homo sapiens

<400> 442
ctaaggaatt agtagtgttc ccataccttg tttggagtgt gctattctaa aagattttga 60
tttcttgaaa tgacaattat attttaactt tgggtgggga aagagttata ggaccacagt 120
cttcacttct gatacttgta aattaatctt ttattgcact tgttttgacc attaatgtat 180
atgttttagaa atggtcattt tacggaaaaa ttagaaaaat tctgataata gtgcagaata 240
aatgaattaa tgttttactt aatttatatt gaactgtcaa tgacaaataa aaattctttt 300
tgattatttt ttgttttcat ttaccagaat aaaaactaag aattaaaagt ttgattacag 360
tc 362

<210> 443
<211> 624
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(624)
<223> n = A,T,C or G

<400> 443
tttttttttt gcaacacaat atacatcaca gtgaaatgtg taatccttgc aaattgcaag 60

```

ttgaaagaat taaattcaga ggaggggaga gaaagagtag tcagtaggga ctgagcacta 120
aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180
tgctggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240
cccaaaccac agaaaatggg gtgaaattgg ccaactttct attaacttgg cttcctgttt 300
tataaaatat tgtgaataat atcacctact tcaaagggca gttatgaggc ttaaatgaac 360
taacgcctac aaaacactta aacatagata acatagggtgc aagtactatg tatctggtac 420
atggtaaaca tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgcta 480
agtacagaga gagggcactt aaaccaacta agggcctgga gggaagggtt cctggaaaga 540
ngatgcttgt gctgggtcca aatcttggtc tactatgacc ttggccaaat tattttaaact 600
ttgtccctat ctgctaaaca gatc 624

```

<210> 444

<211> 425

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(425)

<223> n = A,T,C or G

<400> 444

```

gcacatcatt nntcttgcatt tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggcctgt gtgtgaaccc aatgttttgc ttagaaatag aacaagtaag 120
ttcattgcta tagcataaca caaaatttgc ataagtgggtg gtcagcaaat ccttgaatgc 180
tgcttaatgt gagagggttg taaaatcctt tgtgcaacac tctaactccc tgaatgtttt 240
gctgtgctgg gacctgtgca tgccagacaa ggccaagctg gctgaaagag caaccagcca 300
cctctgcaat ctgccacctc ctgctggcag gatttgtttt tgcacacctg gaagagccaa 360
ggaggcacca gggcataagt gagtagactt atggtcgacg cggccgcgaa tttagtagta 420
gtaga 425

```

<210> 445

<211> 414

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 445

```

catgtttatg nttttggatt actttgggca cctagtgttt ctaaategtc tatcattctt 60
ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120
tgaaattctt tgcattgtggc agattattgg atgtagtttc ctttaactag catataaatc 180
tggtgtgttt cagataaatg aacagcaaaa tgtggtggaa ttaccatttg gaacattgtg 240
aatgaaaaat tgtgtctcta gattatgtaa caaataacta tttcctaacc attgatcttt 300
ggatttttat aatcctactc acaaatgact aggtctctcc tcttgtattt tgaagcagtg 360
tgggtgctgg attgataaaa aaaaaaaaaa tgcacgcggc cgcgaaattta gtag 414

```

<210> 446

<211> 631

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(631)

<223> n = A,T,C or G

<400> 446

```

acaaattaga anaaagtgcc agagaacacc acataccttg tccggaacat tacaatggct 60
tctgcatgca tgggaagtgt gagcattcta tcaatatgca ggagccatct tgcagggtgtg 120
atgctggtta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgtttgttc 180
ccggtccctgt acgatttcag tatgtcttaa tgcagctgt gattggaaca attcagattg 240
ctgtcatctg tgtgggtggtc ctctgcatca caagggccaa actttaggta atagcattgg 300
actgagattt gtaaactttc caaccttcca ggaaatgccc cagaagcaac agaattcaca 360
gacagaagca aaatacaggg cactacagtt cagacaatac aacaagagcg tccacgaggt 420
taatctaaag ggagcatgtt tcacagtggc tggactaccg agagcttgga ctacacaata 480
cagtattata gacaaaagaa taagacaaga gatctacaca tgttgccctg catttgtggt 540
aatctacacc aatgaaaaca tgtactacag ctatatattga ttatgtatgg atatatttga 600
aatagtatac attgtcttga tgttttttct g
631

```

<210> 447

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(585)

<223> n = A,T,C or G

<400> 447

```

ccttgggaaa antntcacia tataaagggt cgtagacttt actccaaatt ccaaaaaggt 60
cctggccatg taatcctgaa agttttccca aggtagctat aaaatcctta taagggtgca 120
gcctcttctg gaattcctct gatttcaaag tctcactctc aagttcttga aaacgagggc 180
agttcctgaa aggcagggtat agcaactgat cttcagaaag aggaactgtg tgcaccggga 240
tgggctgcca gagtaggata ggattccaga tgctgacacc ttctggggga aacagggtcg 300
ccaggtttgt catagcactc atcaaagtcc ggtcaacgtc tgtgcttcga atataaacct 360
gttcatgttt ataggactca ttcaagaatt ttctatatct ctttcttata tactctccaa 420
gttcataatg ctgctccatg cccagctggg tgagttggcc aaatccttgt ggccatgagg 480
attcctttat ggggtcagtg ggaaagggtg caatgggact tccgtctcca tgccgaaaca 540
ccaaagtcac aaacttcaac tccttggcta gtacacttcg gtcta
585

```

<210> 448

<211> 93

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(93)

<223> n = A,T,C or G

<400> 448

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tgctcgtggg tcattctgan nncgaaactg accntgccag ccctgccgan gggccnccat 60
ggctccctag tgccttgag agganggggc tag
93

```

<210> 449

<211> 706

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(706)

<223> n = A,T,C or G

<400> 449

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ccaagttcat gctntgtgct ggacgctgga caggggggcaa aagcnnttgc tctgtgggtca 60
ttctgancac cgaactgacc atgccagccc tgcgatggt cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtcctggaag gtggcctctg ngaggagcca 180
cggggacagc atcctgcaga tggtcgggag cgtcccatc gccattcagg ctgcgcaact 240
gttggaagg gcgacgggtg cgggcctctt cgtattacg ccagctggcg aaagggggat 300
gtgctgcaag gcgattaagt tgggtaacgc caggggtttc ccagtcncga cgttgtaaaa 360
cgacggccag tgaattgaat ttaggtgacn ctatagaaga gctatgacgt cgcattgcacg 420
cgtacgtaag cttggatcct ctagagcggc cgcctactac tactaaattc gcggccgcgt 480
cgacgtggga tccnactga gagagtggag agtgacatgt gctggacnct gtccatgaag 540
cactgagcag aagctggagg cacaacgcnc cagacactca cagctactca ggaggctgag 600
aacaggttga acctgggagg tggaggttgc aatgagctga gatcaggccn ctgcncacca 660
gcatggatga cagagtgaaa ctccatctta aaaaaaaaaa aaaaaa 706
```

<210> 450

<211> 493

<212> DNA

<213> Homo sapiens

<400> 450

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gagacggagt gtcactctgt tgcccaggct ggagtgcagc aagacactgt ctaagaaaaa 60
acagttttta aaggtaaaac aacataaaaa gaaatatcct atagtggaaa taagagagtc 120
aaatgaggct gagaacttta caaagggatc ttacagacat gtcgccaata tcaactgcatg 180
agcctaagta taagaacaac ctttggggag aaaccatcat ttgacagtga ggtacaattc 240
caagtcagggt agtgaaatgg gtggaattaa actcaaatta atcctgccag ctgaaacgca 300
tagagacactg tcagagagtt aaaaagttag ttctatccat gaggtgattc cacagtcttc 360
tcaagtcaac acatctgtga actcacagac caagttctta aaccactgtt caaactctgc 420
tacacatcag aatcacctgg agagctttac aaactcccat tgccgagggt cgacgcggcc 480
gcgaatttag tag 493
```

<210> 451

<211> 501

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(501)

<223> n = A,T,C or G

<400> 451

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gggcgcgtcc cattcgccat tcaggctgag caactgttgg gaagggcgat cgggtgcgggc 60
ctcttcgcta ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagttgggt 120
aacgccaggg ttttcccagt cncgacgttg taaaacgacg gccagtgaat tgaatttagg 180
tgacnctata gaagagctat gacgtcgcat gcacgcgtac gtaagcttgg atcctctaga 240
gcggccgcct actactacta aattcgcgcc cgcgtcgacg tgggatacnc actgagagag 300
tggagagtga catgtgctgg acnctgtcca tgaagcactg agcagaagct ggaggcacia 360
cgcncacagc actcacagct actcaggagg ctgagaacag gttgaacctg ggaggtggag 420
gttgcaatga gctgagatca ggccnctgcn ccccagcatg gatgacagag tgaaactcca 480
tcttaaaaaa aaaaaaaaaa a 501
```

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1) ... (51)
 <223> n = A,T,C or G

<400> 452
 agacgggtttc accntttacaa cnccttttag gatgggnntt ggggagcaag c 51

<210> 453
 <211> 317
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1) ... (317)
 <223> n = A,T,C or G

<400> 453
 tacatcttgc tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa 60
 acatctgaag agctagtcta tcagcatctg gcaagtgaat tggatgggtc tcagaaccat 120
 ttcacccana cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca 180
 taacaaaccc tgctccaatc tgtcacataa aagtctgtga cttgaagttt antcagcacc 240
 cccaccaaac tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataagg 300
 taccatgtc tttatta 317

<210> 454
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 454
 ttcgaggtac aatcaactct cagagtgtag tttccttcta tagatgagtc agcattaata 60
 taagccacgc cagctctctg aaggagtctt gaattctcct ctgctcactc agtagaacca 120
 agaagaccaa attcttctgc atcccagctt gcaaacaaaa ttgttcttct aggtctccac 180
 ctttcttttt tcagtgttcc aaagctcctc acaatttcat gaacaacagc t 231

<210> 455
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 455
 taccaaagag ggcataataa tcagtctcac agtaggggtc accatcctcc aagtgaaaaa 60
 cattgttccg aatgggcttt ccacaggcta cacacacaaa acaggaaaca tgccaagttt 120
 gtttcaacgc attgatgact tctccaagga tcttcttttg gcatcgacca cattcagggg 180
 caaagaattt ctcatagcac agtcacaat acagggtcctc tttctcctct a 231

<210> 456
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 456
 ttggcaggta cccttataaa gaagacacca taccttatgc gttattaggt ggaataatca 60
 ttccattcag tattatcggtt attattcttg gagaaacctt gtctgtttac tgtaaccttt 120
 tgcactcaaa ttcctttatc aggaataact acatagccac tatttataaa gccattggaa 180

ccttttttatt tgggtgcagct gctagtcagtc ccctgactga cattgccaaag t 231

<210> 457

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(231)

<223> n = A,T,C or G

<400> 457

cgagggtaccc aggggtctga aaatctctnn tttantagtc gatagcaaaa ttgttcatca 60
gcattcctta atatgatctt gctataatta gatttttctc cattagagtt catacagttt 120
tatttgattt tattagcaat ctctttcaga agacccttga gatcattaag ctttgtatcc 180
agttgtctaa atcgatgcct catttcctct gaggtgtcgc tggcttttgt g 231

<210> 458

<211> 231

<212> DNA

<213> Homo sapiens

<400> 458

aggtctgggt cccccactt ccactcccct ctactctctc taggactggg ctggggccaag 60
agaagagggg tgggttagga agccgttgag acctgaagcc ccaccctcta ctttccttca 120
acaccctaac cttgggtaac agcatttgga attatcattt gggatgagta gaatttccaa 180
ggtcctgggt taggcatttt ggggggccag accccaggag aagaagattc t 231

<210> 459

<211> 231

<212> DNA

<213> Homo sapiens

<400> 459

ggtaccgagg ctcgctgaca cagagaaacc ccaacgcgag gaaaggaatg gccagccaca 60
ccttcgcgaa acctgtggtg gccaccagtc cctaacggga caggacagag agacagagca 120
gccctgcact gttttccctc caccacagcc atcctgtccc tcattggctc tgtgctttcc 180
actatacaca gtcaccgtcc caatgagaaa caagaaggag caccctccac a 231

<210> 460

<211> 231

<212> DNA

<213> Homo sapiens

<400> 460

gcagggtataa catgctgcaa caacagatgt gactaggaac ggccggtgac atggggaggg 60
cctatcacc ctttcttggg ggctgcttct tcacagtgat catgaagcct agcagcaaat 120
cccacctccc cacacgcaca cggccagcct ggagcccaca gaagggtcct cctgcagcca 180
gtggagcttg gtccagcctc cagtccaccc ctaccaggct taaggataga a 231

<210> 461

<211> 231

<212> DNA

<213> Homo sapiens

<400> 461

cgagggttga gaagctctaa tgtgcagggg agccgagaag caggcggcct agggagggtc 60

gcgtgtgctc cagaagagtg tgtgcatgcc agaggggaaa caggcgctg tgtgtcctgg 120
gtgggggttca gtgaggagtg ggaaattggt tcagcagaac caagccgttg ggtgaataag 180
agggggattc catggcactg atagagccct atagtctcag agctgggaat t 231

<210> 462

<211> 231

<212> DNA

<213> Homo sapiens

<400> 462

aggtaccctc attgtagcca tgggaaaatt gatgttcagt ggggatcagt gaattaaatg 60
gggtcatgca agtataaaaa ttaaaaaaaa aagacttcat gcccaatctc atatgatgtg 120
gaagaactgt tagagagacc aacagggtag tgggttagag atttccagag tcttacattt 180
tctagaggag gtatttaatt tcttctcact catccagtgt tgtatttagg a 231

<210> 463

<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

tactccagcc tgggtacaga gcgagaccct atcaccgccc cccacccccc caaaaaaaaa 60
actgagtaga cagggtgtcct cttggcatgg taagtcttaa gtccccctcc agatctgtga 120
catttgacag gtgtcttttc ctctggacct cgggtgtccc atctgagtga gaaaaggcag 180
tggggagggtg gatcttccag tcgaagcggt atagaagccc gtgtgaaaag c 231

<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

gtactctaaag attttatcta agttgccttt tctgggtggg aaagttaaac cttagtgact 60
aaggacatca catatgaaga atgtttaagt tggagggtggc aacgtgaatt gcaaacaggg 120
cctgcttcag tgactgtgtg cctgtagtcc cagctactcg ggagtctgtg tgaggccagg 180
ggtgccagcg caccagctag atgctctgta acttctaggc cccattttcc c 231

<210> 465

<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

catgttggtg tagctgtggt aatgctggct gcatctcaga cagggttaac ttcagtcct 60
gtggcaaat agcaacaaat tctgacatca tatttatggt ttctgtatct ttgttgatga 120
aggatggcac aatttttctg tgtgttcata atatactcag attagtccag ctccatcaga 180
taaactggag acatgcagga cattagggta gtgttgtagc tctggtaatg a 231

<210> 466

<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

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ggccttcgaa cagaacttgc cacataccca ggtataatag tttctaacat ttgccagga 120
cctgtgcaat caaatattgt ggagaattcc ctagtggag aagtcacaaa gactataggc 180
aataatggag accagtccca caagatgaca accagtcggt gtgtgcggct g 231

<210> 467
 <211> 311
 <212> DNA
 <213> Homo sapiens

<400> 467
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 tgggtggcttt tctccttttt catcaagact cctcagcagg gagcccagac cagcctgcac 120
 tgtgccttaa cagaaggtct tgagattcta agtgggaatc atttcagtga ctgtcatgtg 180
 gcatgggtct ctgcccgaagc tcgtaatgag actatagcaa ggcggctgtg ggacgtcagt 240
 tgtgacctgc tgggcctccc aatagactaa caggcagtg cagttggacc caagagaaga 300
 ctgcagcaga c 311

<210> 468
 <211> 3112
 <212> DNA
 <213> Homo sapiens

<400> 468
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atatcacagg attaactttt ttttttaacc tggagaatt caatgttaca tgcagctatg 2340
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gcaaatacta aaagtgtaat ttgattataa gagtttagat aaatatatga aatgcaagag 2760
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agcttttcac agaattcatg cagtgcacaa ccccaaagggt aacctttatc cattttcatgg 2940
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tttgtccttg tagttaattg aaagaaatag ggcactcttg tgagccactt tagggttcac 3060
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<210> 469

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

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agctctttgt aaattcttta ttgccaggag tgaaccctaa agtggctcac aagagtgtccc 60
tatttctttc aattaactac aaggacaaac acatctcaaa gttgagataa gtgaccagta 120
tgatttgcca aaattctaaa gcgcactcac catgaaatgg ataaagggtta cctttgggga 180
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aacgtgcccc ataaacattc cctctgtggc tcttgcatth catatattta tctaaactct 360
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<210> 470

<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

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<210> 471

<211> 812

<212> DNA

<213> Homo sapiens

<400> 471

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812

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<211> 515

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(515)

<223> n = A,T,C or G

<400> 472

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515

<210> 473

<211> 5829

<212> DNA

<213> Homo sapiens

<400> 473

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<211> 1594

<212> DNA

<213> Homo sapiens

<400> 474

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<211> 2414
<212> DNA
<213> Homo sapiens

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<221> unsure
<222> (33)
<223> n=A,T,C or G

<400> 475
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<210> 476
<211> 3434
<212> DNA
<213> Homo sapiens

<400> 476

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<210> 477

<211> 140

<212> PRT

<213> Homo sapiens

<400> 477

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Met Asp Gly His Thr Asp Ile Trp Arg Asn His Met Asp Thr Pro Pro
                    5                      10                      15

His Tyr His Arg Asp Thr Asp Thr Arg Arg His His His Met Asp Thr
                    20                      25                      30

Leu Ser His Tyr His Arg Asp Thr Arg His His Thr Val Thr Trp Thr
                    35                      40                      45

His His His Thr His Glu His Thr Asp Thr Leu Pro Tyr Gly His Trp
                    50                      55                      60

His Thr His Cys His Thr Val Thr Trp Thr His Leu His Thr Ile Thr
                    65                      70                      75                      80

Pro Pro His Thr Leu Pro Val Asp Thr Arg Thr His Arg His Cys His
                    85                      90                      95

Thr Asp Thr Gln Asn Thr Val Thr Arg Arg His His His Ala Asp Thr
                    100                     105                     110

Pro Pro Leu Trp Cys Arg Leu Asn Tyr Pro Ala Gly Gly Thr Ala Val
                    115                     120                     125

Ala Tyr Ser Cys Leu Ser Asp Trp Leu Ser Pro Gln
                    130                     135                     140

```

<210> 478

<211> 143

<212> PRT

<213> Homo sapiens

<400> 478

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Met Tyr Arg His Thr Glu Thr Leu Pro His Gly Asp Thr Val Thr Gln
                    5                      10                      15

Ser His Gly His Thr Gly Ile Val Thr Trp Thr Asp Thr Gln Thr Tyr
                    20                      25                      30

Gly Glu Ile Thr Trp Thr His His His Thr Ile Thr Gly Thr Gln Thr
                    35                      40                      45

His Gly Asp Ile Thr Thr Trp Thr His Cys His Thr Thr Thr Gly Thr
                    50                      55                      60

Arg Asp Ile Thr Leu Ser His Gly His Thr Ile Thr His Met Asn Thr
                    65                      70                      75                      80

Pro Thr His Cys His Met Asp Thr Gly Thr His Thr Ala Thr Leu Ser
                    85                      90                      95

```

His Gly His Thr Ser Thr Pro Ser His His His Thr His Cys Leu Trp
 100 105 110

Thr Gln Gly His Thr Asp Thr Val Thr Gln Ile His Lys Thr Leu Ser
 115 120 125

His Gly Asp Ile Thr Met Gln Ile His His His Ser Gly Ala Val
 130 135 140

<210> 479

<211> 222

<212> PRT

<213> Homo sapiens

<400> 479

Met Tyr Arg His Thr Glu Thr Leu Pro His Gly Asp Thr Val Thr Gln
 5 10 15

Ser His Glu His Thr Gly Ile Val Thr Trp Thr Asp Thr Gln Thr Tyr
 20 25 30

Gly Glu Ile Thr Leu Thr His His His Thr Ile Thr Gly Thr Gln Thr
 35 40 45

His Gly Asp Ile Thr Thr Trp Thr His Cys His Thr Thr Thr Gly Thr
 50 55 60

Arg Asp Ile Thr Leu Ser His Gly His Thr Ile Thr His Met Asn Thr
 65 70 75 80

Pro Thr His Cys His Met Asp Thr Ala Thr His Thr Ala Thr Leu Ser
 85 90 95

His Gly His Thr Ser Ile Pro Ser His His His Thr His Cys His Val
 100 105 110

Asp Thr Arg Thr His Arg His Cys His Thr Asp Thr Gln Asn Thr Val
 115 120 125

Thr Arg Arg His His His Ala Asp Thr Pro Pro His Gly His Ser Thr
 130 135 140

Arg His Ser Ala Thr Gln Ile His His His Thr Glu Met Arg Thr His
 145 150 155 160

Cys His Thr Asp Thr Thr Thr Ser Leu Pro His Phe His Val Ser Ala
 165 170 175

Gly Gly Val Gly Pro Thr Thr Leu Gly Ser Asn Arg Glu Ile Thr Trp
 180 185 190

Thr Tyr Ser Glu Gly Lys Ile Phe Phe Tyr Phe Leu Gly Asn Gln Ala
 195 200 205

Arg Leu Cys Leu Lys Lys Arg Lys Lys Lys Gln Tyr Thr Val
 210 215 220

<210> 480

<211> 144

<212> PRT

<213> Homo sapiens

<400> 480

Met Glu Pro Tyr Arg Gly Asn Glu Gln Pro Ser Gln Glu Gln Gly Val
 5 10 15

Cys Cys Leu Trp Gly Leu Gln Ser Leu Pro Gln Gly Ser Tyr Val Thr
 20 25 30

Val Gly Phe Leu Val Val Lys Arg Gln Thr Ile Gly Arg Leu Glu Arg
 35 40 45

Asp Phe Met Phe Lys Cys Arg Lys Gln Pro Gly Leu Pro Pro Ser Gly
 50 55 60

Leu Cys Leu Leu Trp Pro Trp Pro Asn Leu Glu Phe Gly Arg Arg Gln
 65 70 75 80

Asp Arg Leu Thr Trp Ser Ser Val Ser Val Ala Gly Val Cys Ala Cys
 85 90 95

Arg Ala Arg Pro Gly Trp Leu Gly Glu Gln Pro Ala Thr Ser Ala Gly
 100 105 110

Val Arg Leu Glu Gln Val Glu Gln Pro Pro Ala His Pro Leu Gln Glu
 115 120 125

Ala Gly Val Ala Arg Phe Pro Arg Pro Glu Trp Val Pro Pro Asn Gly
 130 135 140

<210> 481

<211> 167

<212> PRT

<213> Homo sapiens

<400> 481

Met His Gly Pro Gln Val Leu Ala Arg Cys Ser Glu Cys Ala Cys Pro
 5 10 15

Ala Leu Ala Ala Thr Ser Ala Gly Val Arg Leu Glu Gly Val Asp Arg
 20 25 30

Pro Pro Thr Leu Pro Ser Gln Gly Ser Gly Trp Pro Cys Ser His Ser
 35 40 45

Leu Ser Gly Cys His Leu Met Ala Asp Gly Ala Lys Ala Leu Gly Lys
 50 55 60

Ala Asp Gly Pro Trp Pro Tyr Leu Phe Val Arg Arg Thr Asp Val Pro

168

65		70		75		80									
Cys	Pro	Ala	Ala	Ser	Glu	Val	Gly	Gly	Cys	Ala	Pro	Ser	Ser	Trp	Arg
				85					90					95	
Ala	Leu	Ala	Glu	Val	Thr	Gly	Cys	Ser	Leu	Gly	Pro	Leu	Gly	Leu	Ala
			100					105					110		
Gln	His	Ala	Gln	Ala	Ser	Val	Leu	Leu	Leu	Cys	Tyr	Lys	Trp	Ser	His
		115					120					125			
Ile	Gly	Glu	Thr	Ser	Ser	His	Leu	Arg	Ser	Lys	Val	Tyr	Ala	Ala	Phe
	130					135					140				
Gly	Gly	Ser	Ser	Pro	Cys	Leu	Lys	Gly	Leu	Met	Ser	Leu	Trp	Ala	Ser
145					150					155					160
Trp	Leu	Ser	Arg	Gly	Arg	Pro									
				165											

<210> 482

<211> 143

<212> PRT

<213> Homo sapiens

<400> 482

Met	Glu	Pro	Tyr	Arg	Gly	Asn	Lys	Lys	Gln	Val	Gln	Glu	Lys	Gly	Val
				5					10					15	
Pro	Cys	Leu	Trp	Gly	Ser	Ser	Pro	Cys	Leu	Arg	Cys	His	Met	Ala	Leu
			20					25					30		
Arg	Ala	Ser	Trp	Leu	Pro	Gly	Gly	Gly	Pro	Gln	Ala	Ile	Leu	Gly	Arg
		35					40					45			
Thr	Leu	Cys	Ser	Ser	Ala	Glu	Ser	Ser	Gln	Asp	Cys	His	Pro	Gly	Gly
	50					55					60				
Pro	Ser	Ile	Ala	Leu	Ala	Lys	Pro	Cys	Arg	Gly	Val	Trp	Leu	Leu	Phe
65				70					75						80
Glu	Pro	Ala	Trp	Pro	Pro	Trp	His	Ala	Arg	Ala	Pro	Gly	Ala	Gly	Thr
			85					90					95		
Leu	Leu	Arg	Val	Cys	Leu	Ser	Cys	Leu	Gly	Cys	His	Leu	Cys	Gly	Gly
		100						105					110		
Ala	Ser	Gly	Gly	Gly	Gly	Pro	Ala	Thr	Asn	Leu	Thr	Gln	Ser	Arg	Lys
		115					120					125			
Trp	Met	Ala	Met	Phe	Pro	Gln	Pro	Glu	Trp	Leu	Pro	Pro	Asp	Gly	
	130					135					140				

<210> 483

<211> 143

<212> PRT

<213> Homo sapiens

<400> 483

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Met Glu Thr Gln Arg Gly Asn Lys Gln Arg Ala Gln Glu Gln Gly Val
      5              10              15

Cys Cys Leu Trp Gly Ser Ser Pro Cys Leu Gly Ser Tyr Gly Thr Ala
      20              25              30

Gly Phe Leu Val Ala Lys Arg Arg Thr Thr Gly Leu Leu Glu Glu Asp
      35              40              45

Phe Thr Phe Lys Cys Arg Lys Gln Pro Lys Leu Pro Ser Met Arg Leu
      50              55              60

Ser Leu Leu Trp Pro Trp Arg Asp Leu Lys Phe Val Pro Arg Gln Asp
      65              70              75              80

Lys Leu Thr Arg Ser Ser Val Ser Val Ala Gly Ala Tyr Ala Cys Arg
      85              90              95

Ala Gly Pro Gly Trp Leu Lys Glu Gln Pro Ala Thr Ser Ala Arg Val
      100             105             110

Arg Leu Val Gln Ala Glu His Pro Pro Pro His Pro Leu Glu Glu Val
      115             120             125

Gly Met Ala Arg Phe Pro Gln Pro Glu Cys Leu Pro Pro Tyr Cys
      130             135             140

```

<210> 484

<211> 30

<212> PRT

<213> Homo Sapien

<400> 484

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Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly Phe
  1      5              10              15
Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile
      20              25              30

```

<210> 485

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 485

gggaagctta tcacctatgt gccgcctctg c

31

<210> 486

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 486

gcgaattctc acgctgagta tttggcc

27

<210> 487

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 487

cccgaattct tagctgccca tccgaacgcc ttcattc

36

<210> 488

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 488

gggaagcttc ttccccggct gcaccagctg tgc

33

<210> 489

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 489

Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala

1

5

10

15

Ser Val Ala

<210> 490

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 490

Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys

1

5

10

15

Leu Ser His Ser

20

<210> 491

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 491

Thr	Cys	Leu	Ser	His	Ser	Val	Ala	Val	Val	Thr	Ala	Ser	Ala	Ala	Leu
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Thr	Gly	Phe	Thr												
			20												

<210> 492

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 492

Ala	Leu	Thr	Gly	Phe	Thr	Phe	Ser	Ala	Leu	Gln	Ile	Leu	Pro	Tyr	Thr
1				5					10					15	
Leu	Ala	Ser	Leu												
			20												

<210> 493

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 493

Tyr	Thr	Leu	Ala	Ser	Leu	Tyr	His	Arg	Glu	Lys	Gln	Val	Phe	Leu	Pro
1				5					10					15	
Lys	Tyr	Arg	Gly												
			20												

<210> 494

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 494

Leu	Pro	Lys	Tyr	Arg	Gly	Asp	Thr	Gly	Gly	Ala	Ser	Ser	Glu	Asp	Ser
1				5					10					15	
Leu	Met	Ile	Ser												
			20												

<210> 495

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 495

Asp Ser Leu Met Thr Ser Phe Leu Pro Gly Pro Lys Pro Gly Ala Pro
1 5 10 15
Phe Pro Asn Gly
20

<210> 496

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 496

Ala Pro Phe Pro Asn Gly His Val Gly Ala Gly Gly Ser Gly Leu Leu
1 5 10 15
Pro Pro Pro Pro Ala
20

<210> 497

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 497

Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys Asp Val
1 5 10 15
Ser Val Arg Val
20

<210> 498

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 498

Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala Arg Val
1 5 10 15
Val Pro Gly Arg
20

<210> 499

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 499

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Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 1           5           10           15
Ser Ala Phe Leu
                20
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<210> 500

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 500

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Leu Asp Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met
 1           5           10           15
Gly Ser Ile Val
                20
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<210> 501

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 501

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Phe Met Gly Ser Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met
 1           5           10           15
Val Ser Ala Ala
                20
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<210> 502

<211> 414

<212> DNA

<213> Homo Sapien

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 502

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ctgtagagtt tttggaatng acctcagtag caatgcaatg agctgggtcc gccaggctcc      180
aggggaagggg ctggaatgga tcggagccat tgataattgt ccacantacg cgacctgggc      240
gaaaggccga ttnatnattt ccaaaacctn gaccacgggtg gatttgaaaa tgaccagtcc      300
gacaaccgag gacacggcca cctatTTTTT tggcagaatg aatactggta atagtggttg      360
gaagaatatt tggggcccag gcaccctggt caccgtntcc tcagggcaac ctaa      414
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<210> 503

<211> 379

<212> DNA

<213> Homo Sapiens

<220>

<221> misc_feature

<222> (1)...(379)

<223> n = A,T,C or G

<400> 503

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agctatggag	tgagctgggt	ccgccaggct	ccagggaagg	ggctgggnata	catcgatca	180
ttagtagtag	tggtacattt	tacgcgagct	gggcgaaagg	ccgattcacc	atttccaaaa	240
cctngaccac	ggtggatttg	aaaatcacca	gtttgacaac	cgaggacacg	gccacctatt	300
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tntccttagg	gcaacctaa					379

<210> 504

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 504

Gly	Phe	Thr	Asn	Tyr	Thr	Asp	Phe	Glu	Asp	Ser	Pro	Tyr	Phe	Lys	Glu
1				5					10					15	
Asn	Ser	Ala													

<210> 505

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 505

Lys	Glu	Asn	Ser	Ala	Phe	Pro	Pro	Phe	Cys	Cys	Asn	Asp	Asn	Val	Thr
1				5					10					15	
Asn	Thr	Ala	Asn												
				20											

<210> 506

<211> 407

<212> DNA

<213> Homo Sapien

<400> 506

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ctgacaaccg	aggacacggc	cacctatttc	tgtgccagaa	atagtgattt	tagtggtatg	360
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<210> 507
 <211> 422
 <212> DNA
 <213> Homo Sapien

<400> 507
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 ccgacaaccg aggacacggc cacctatttc tgtgccagag ggtggaagtg cgatgagtct 360
 ggtccgtgct tgcgcctctg gggcccaggc accctgggtc ccgtctcctt agggcaacct 420
 aa 422

<210> 508
 <211> 411
 <212> DNA
 <213> Homo Sapiens

<220>
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 <222> (1)...(411)
 <223> n = A,T,C or G

<400> 508
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 cagtctctgg aatcgacctc agtagctact gcatgagctg ggtccgccag gctccagggg 180
 aggggctgga atggatcgga atcattggta ctctgggtga cacatactac gcgaggtggg 240
 cgaaaaggccg attcaccatc tccaaaacct cgaccacggt gcatntgaaa atcnccagtc 300
 cgacaaccga ggacacggcc acctattttc gtgccagaga tcttcgggat ggtagtagta 360
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<210> 509
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 509
 Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 1 5 10 15

<210> 510
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

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 1 5 10 15

<210> 511
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 511

Tyr	His	Pro	Ser	Met	Phe	Cys	Ala	Gly	Gly	Gly	Gln	Asp	Gln	Lys
1				5					10					15

<210> 512
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 512

Asp	Ser	Gly	Gly	Pro	Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu
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<210> 513
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 513

Ala	Pro	Cys	Gly	Gln	Val	Gly	Val	Pro	Asx	Val	Tyr	Thr	Asn	Leu
1				5					10					15

<210> 514
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 514

Leu	Cys	Lys	Phe	Thr	Glu	Trp	Ile	Glu	Lys	Thr	Val	Gln	Ala	Ser
1				5					10					15

<210> 515
<211> 15
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Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg
1 5 10 15

<210> 516
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 516
Val Ser Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln
1 5 10 15

<210> 517
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 517
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1 5 10 15

<210> 518
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 518
Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
1 5 10 15

<210> 519
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 519
Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg Asn Tyr Asp Glu Gly Cys
1 5 10 15
Gly

<210> 520
<211> 25
<212> PRT
<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 520

Val	Gly	Glu	Gly	Leu	Tyr	Gln	Gly	Val	Pro	Arg	Ala	Glu	Pro	Gly	Thr
1				5				10						15	
Glu	Ala	Arg	Arg	His	Tyr	Asp	Glu	Gly							
			20					25							

<210> 521

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 521

Ala	Pro	Phe	Pro	Asn	Gly	His	Val	Gly	Ala	Gly	Gly	Ser	Gly	Leu	Leu
1				5				10						15	
Pro	Pro	Pro	Pro	Ala											
				20											

<210> 522

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 522

Leu	Leu	Val	Val	Pro	Ala	Ile	Lys	Lys	Asp	Tyr	Gly	Ser	Gln	Glu	Asp
1				5					10					15	
Phe	Thr	Gln	Val												
			20												

<210> 523

<211> 254

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<220>

<221> VARIANT

<222> (1)...(254)

<223> Xaa = any amino acid

<400> 523

Met	Ala	Thr	Ala	Gly	Asn	Pro	Trp	Gly	Trp	Phe	Leu	Gly	Tyr	Leu	Ile
1				5				10						15	
Leu	Gly	Val	Ala	Gly	Ser	Leu	Val	Ser	Gly	Ser	Cys	Ser	Gln	Ile	Ile
			20					25					30		
Asn	Gly	Glu	Asp	Cys	Ser	Pro	His	Ser	Gln	Pro	Trp	Gln	Ala	Ala	Leu
			35				40						45		

Val Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln
 50 55 60
 Trp Val Leu Ser Ala Thr His Cys Phe Gln Asn Ser Tyr Thr Ile Gly
 65 70 75 80
 Leu Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met
 85 90 95
 Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu
 100 105 110
 Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu
 115 120 125
 Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala
 130 135 140
 Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg
 145 150 155 160
 Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu
 165 170 175
 Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys
 180 185 190
 Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser Gly
 195 200 205
 Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly
 210 215 220
 Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu
 225 230 235 240
 Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 245 250

<210> 524

<211> 765

<212> DNA

<213> Homo sapien

<400> 524

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atgcctaccg	tgctgcagtg	cgtgaacgtg	tccgtgggtg	ctgaggagggt	ctgcagtaag	540
ctctatgacc	cgctgtacca	ccccagcatg	ttctgcgcgc	gcggagggca	agaccagaag	600
gactcctgca	acggtgactc	tggggggccc	ctgatctgca	acgggtactt	gcagggcctt	660
gtgtctttcg	gaaaagcccc	gtgtggccaa	gttggcgctg	caggtgtcta	caccaacctc	720
tgcaaatcca	ctgagtggat	agagaaaacc	gtccaggcca	gttaa		765

<210> 525

<211> 254

<212> PRT

<213> Homo sapien

<400> 525

Met Ala Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile
 1 5 10 15
 Leu Gly Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile
 20 25 30
 Asn Gly Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu

35	40	45
Val Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln		
50	55	60
Trp Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly		
65	70	75
Leu Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met		
85	90	95
Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu		
100	105	110
Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu		
115	120	125
Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala		
130	135	140
Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg		
145	150	155
Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu		
165	170	175
Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys		
180	185	190
Ala Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly		
195	200	205
Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly		
210	215	220
Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu		
225	230	235
Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser		
245	250	

<210> 526

<211> 963

<212> DNA

<213> Homo sapiens

<400> 526

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<210> 527

<211> 320

<212> PRT

<213> Homo sapiens

<400> 527

305

310

315

320

<210> 528
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<212> DNA
<213> Homo Sapien

<400> 528
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<210> 529
<211> 20
<212> DNA
<213> Homo Sapien

<400> 529
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20

<210> 530
<211> 1852
<212> DNA
<213> Homo sapiens

<400> 530

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<210> 531
<211> 879

<212> DNA

<213> Homo sapiens

<400> 531

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<210> 532

<211> 292

<212> PRT

<213> Homo sapiens

<400> 532

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Val Lys Thr Leu Gly Ser Lys Arg Cys Lys Trp Cys Cys His Cys Phe
                    35                      40                      45

Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val Val Ala Trp Gly Asp
                    50                      55                      60

Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr His Val His Gly Glu
                    65                      70                      75                      80

Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg
                    85                      90                      95

Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Arg Asp
                    100                     105                     110

Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser
                    115                     120                     125

Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys Gln Leu Asn Val Leu
                    130                     135                     140

Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala Val Gln Cys Gln Glu
                    145                     150                     155                     160

Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile
                    165                     170                     175

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Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Val Tyr Asn Glu
 180 185 190

Asp Lys Leu Met Ala Lys Ala Leu Leu Tyr Gly Ala Asp Ile Glu
 195 200 205

Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Ile His Glu
 210 215 220

Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu
 225 230 235 240

Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys
 245 250 255

Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu Glu Gln Asn Val Asp
 260 265 270

Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu Ser Met Leu Phe Leu
 275 280 285

Val Ile Ile Met
 290

<210> 533
 <211> 801
 <212> DNA
 <213> Homo sapiens

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<210> 534
 <211> 266
 <212> PRT
 <213> Homo sapiens

<400> 534
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 5 10 15

Arg Lys Gln Ala Ala Gly Ser Gly Ala Gly Tyr Ala Leu Pro Ser Ala
 20 25 30

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<210> 535
<211> 6082
<212> DNA
<213> Homo sapiens
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<400> 535						
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gctcacgcgt	gttcttctg	tggctcaatc	ccttqttaa	aattggccat	aaacggaat	300

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ctttaacaag	agcaatcata	aagtgttact	ggaaatctta	tttagttttg	ggaattttta	480
cgtaattga	ggaaagtgcc	aaagtaatcc	agcccatatt	tttgggaaaa	attattaatt	540
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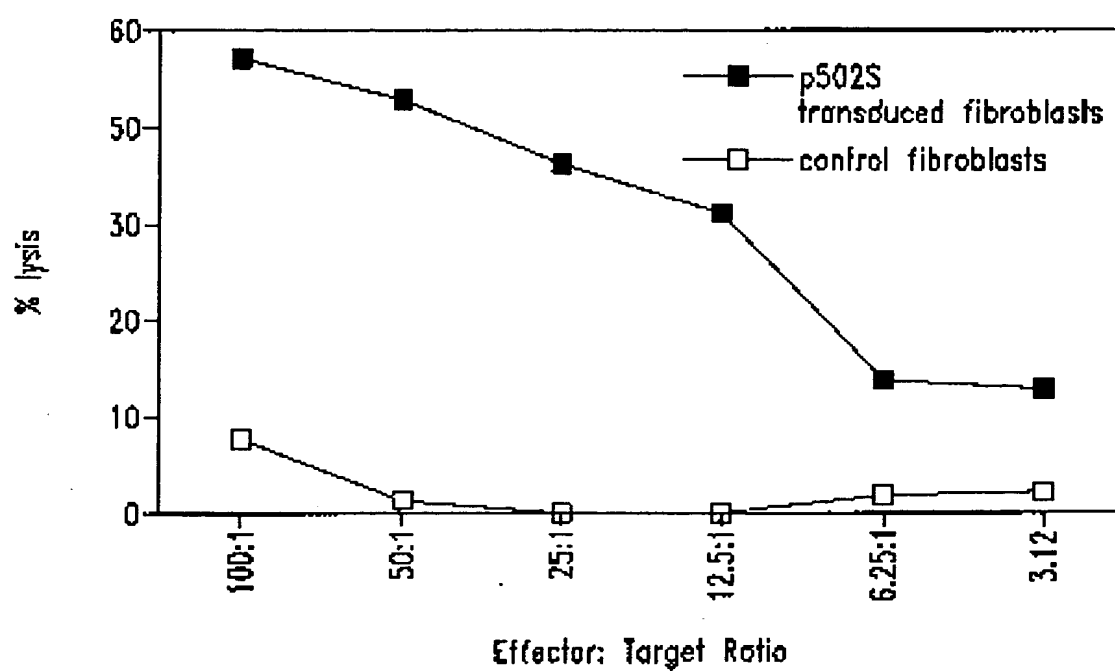
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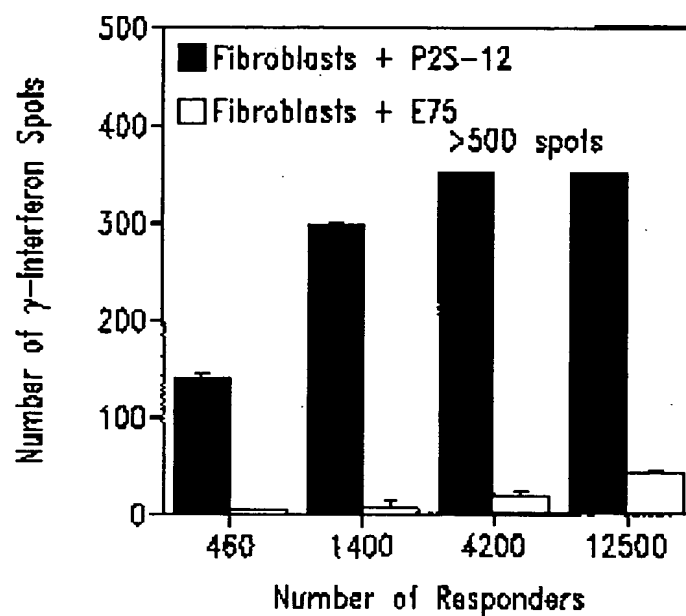
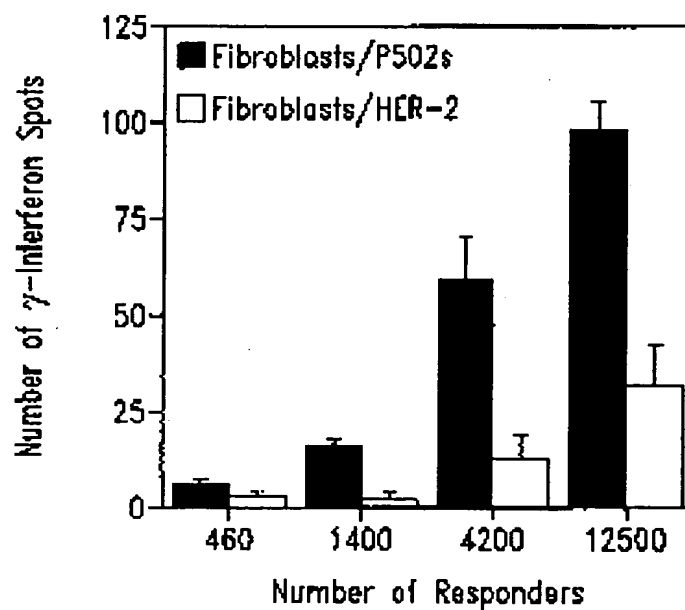
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*Fig. 1*

*Fig. 2A**Fig. 2B*

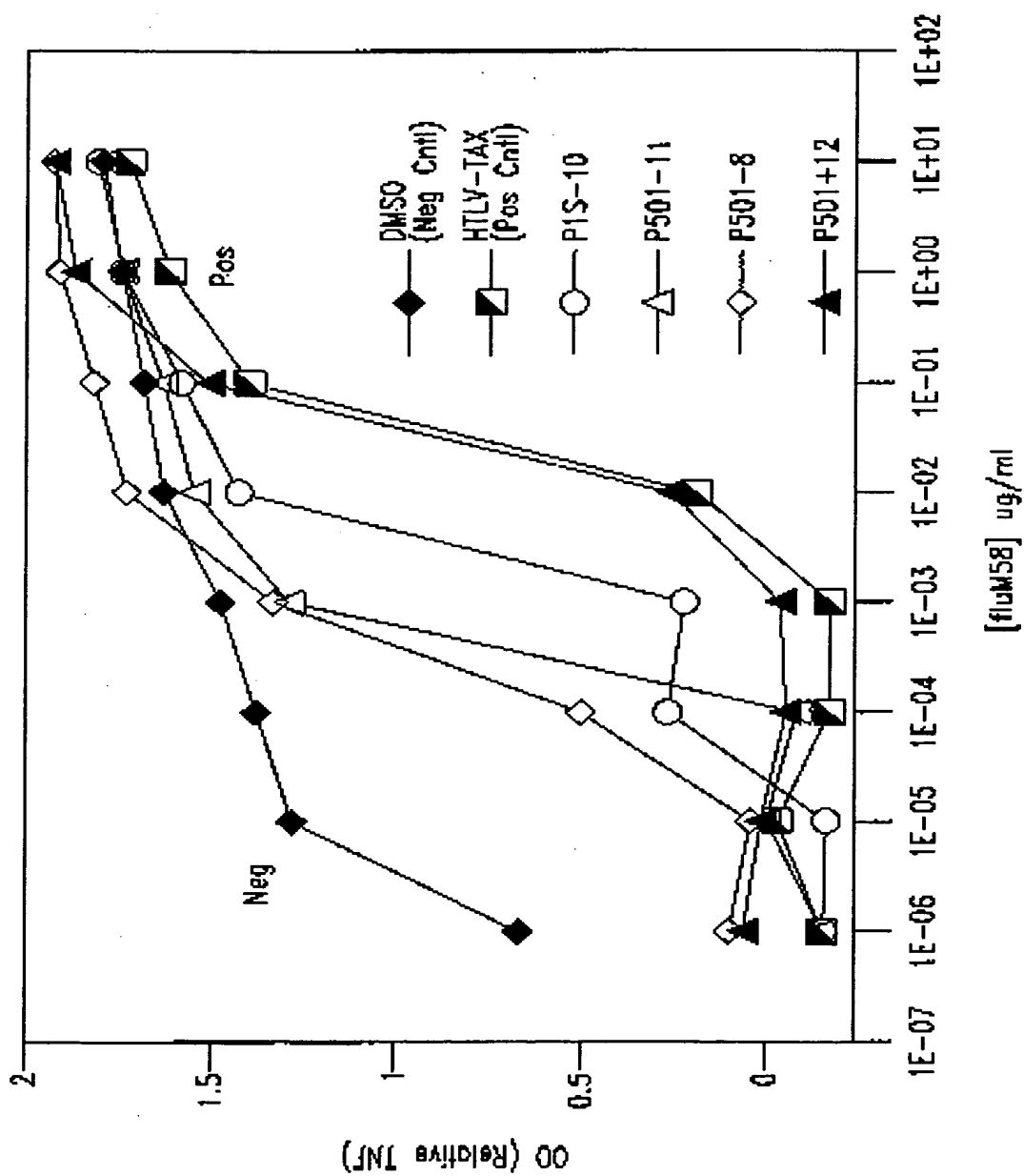
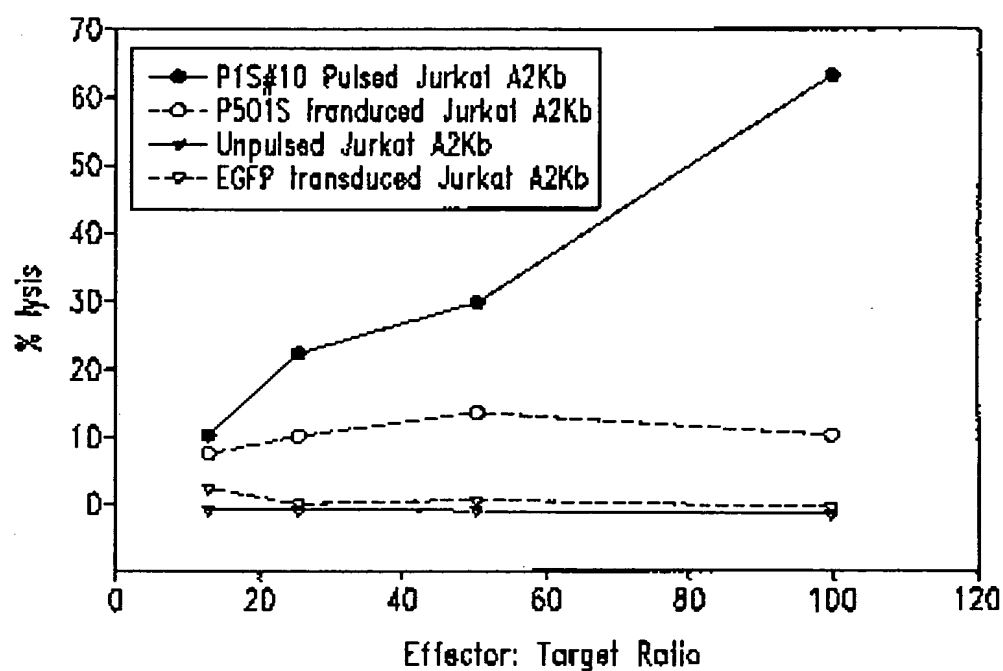
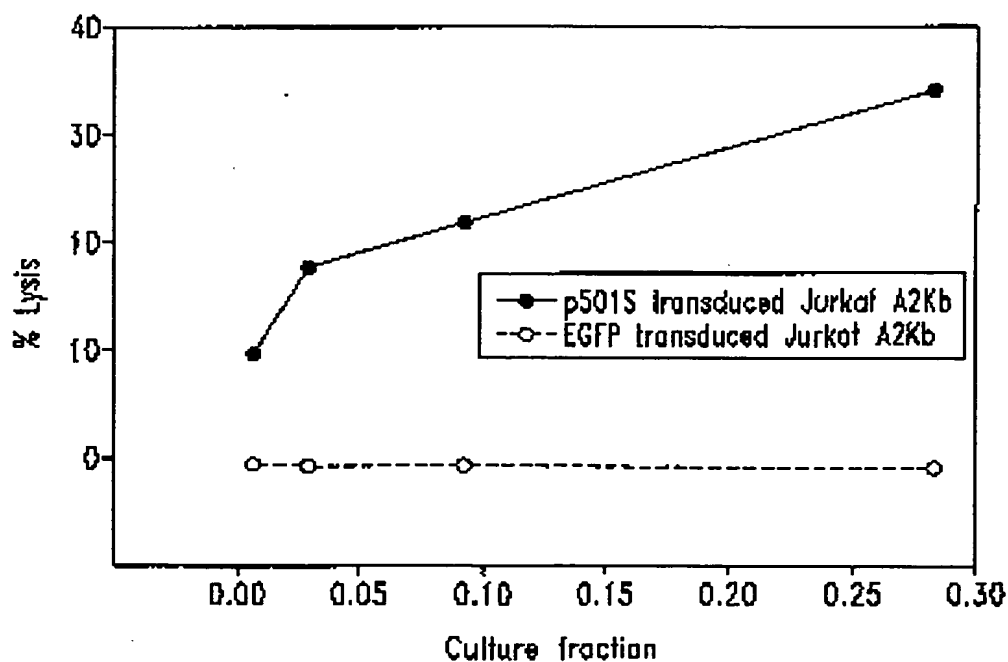
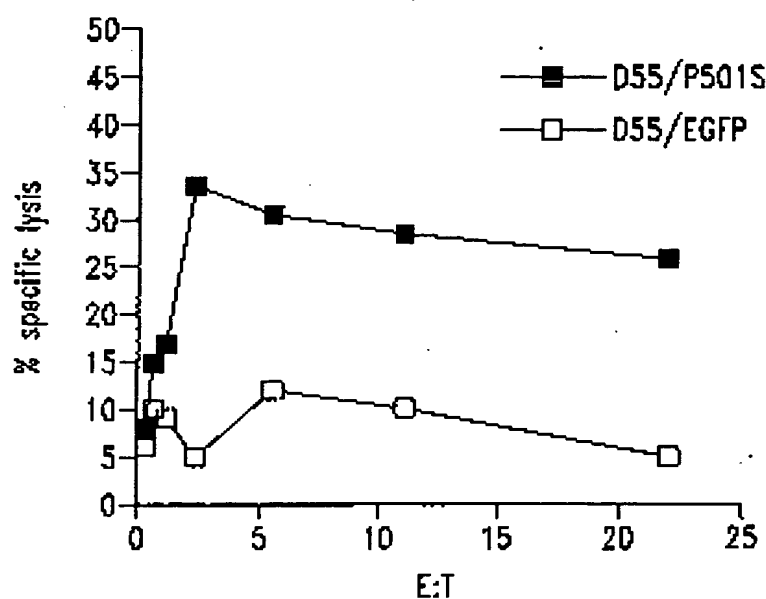
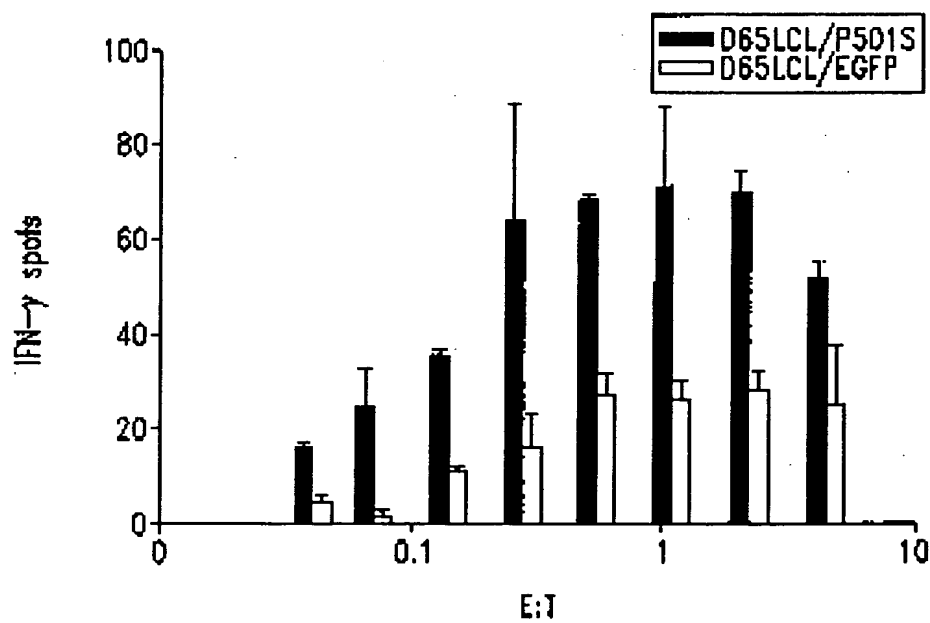
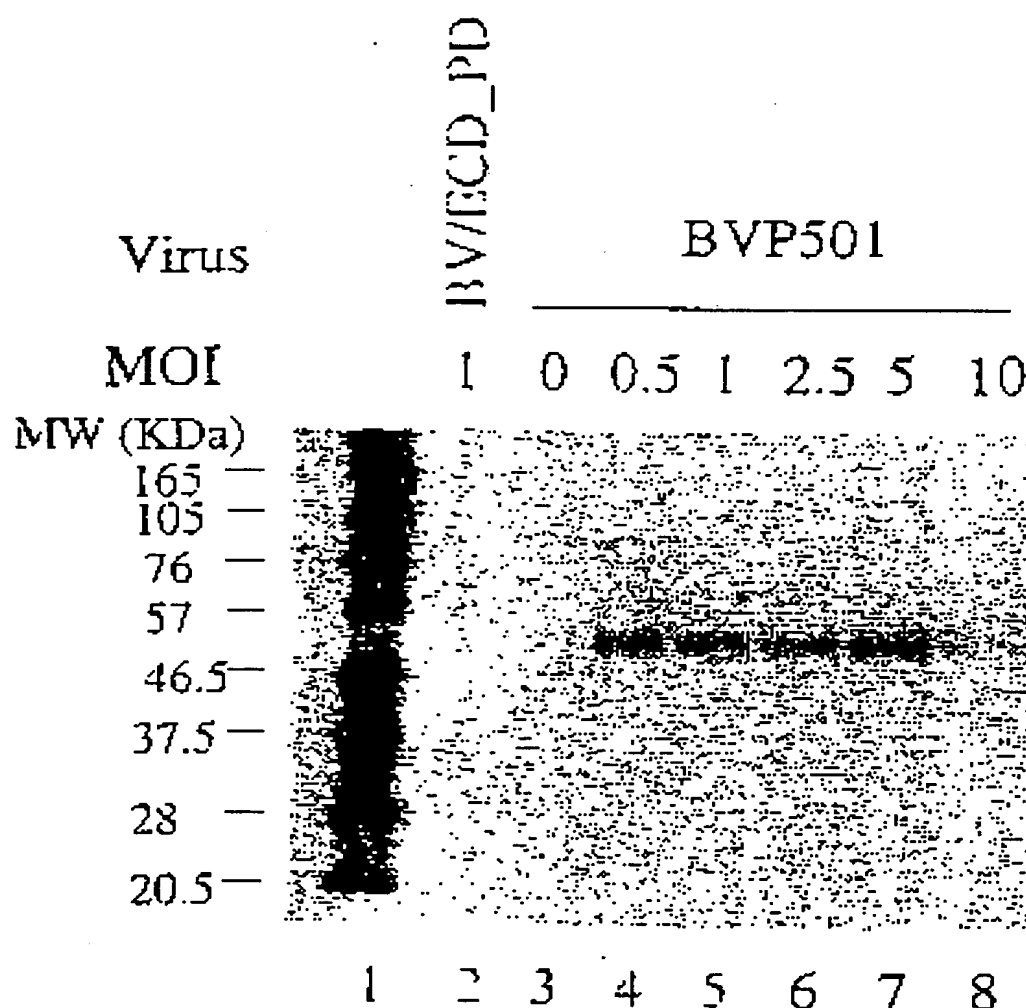


Fig. 3

*Fig. 4**Fig. 5*

*Fig. 6A**Fig. 6B*

Expression of P501S by the Baculovirus Expression System



0.6 million high 5 cells in 8-well plate were infected with an unrelated control virus BV/ECD_PD (lane 2), without virus (lane 3), or with recombinant baculovirus for P501 at different MOIs (lane 4 - 8). Cell lysates were run on SDS-PAGE under the reducing conditions and analyzed by Western blot with a monoclonal antibody against P501S (P501S-10E3-G4D3). Lane 1 is the biotinylated protein molecular weight marker (BioLabs).

Fig. 7

Fig. 8



Schematic of P501S with predicted
transmembrane, cytoplasmic, and extracellular regions

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VTAYMVSAAGLGLVAIFYAT QVVFDKSDLAKYSA

Underlined sequence: Predicted transmembrane domain; **Bold sequence**:
 Predicted extracellular domain; *Italic sequence*: Predicted intracellular
 domain. Sequence in bold/underlined: used generate polyclonal rabbit
 serum

Localization of domains predicted using HMMTOP (G.E. Tusnady and I. Simon
 (1998) Principles Governing Amino Acid Composition of Integral Membrane
 Proteins: Applications to topology Prediction. J. Mol Biol. 283, 489-506.

Fig. 9

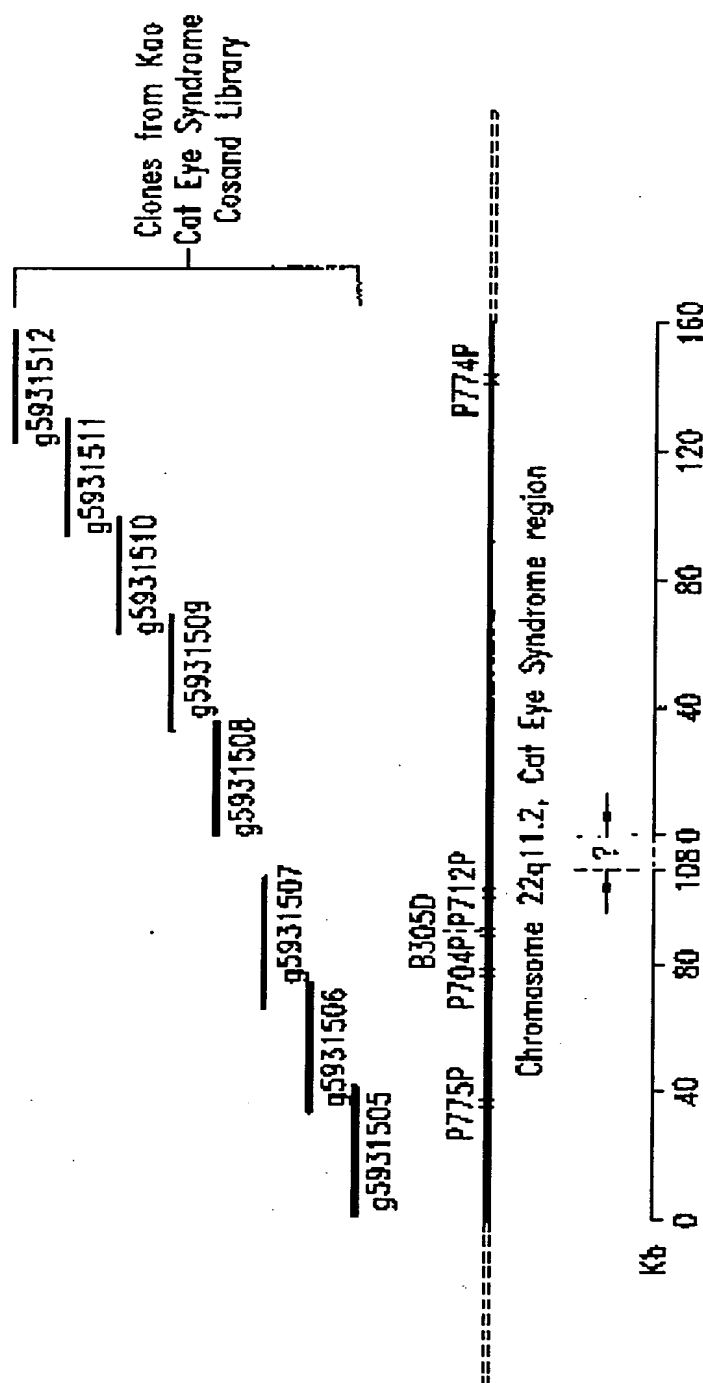


Fig. 10

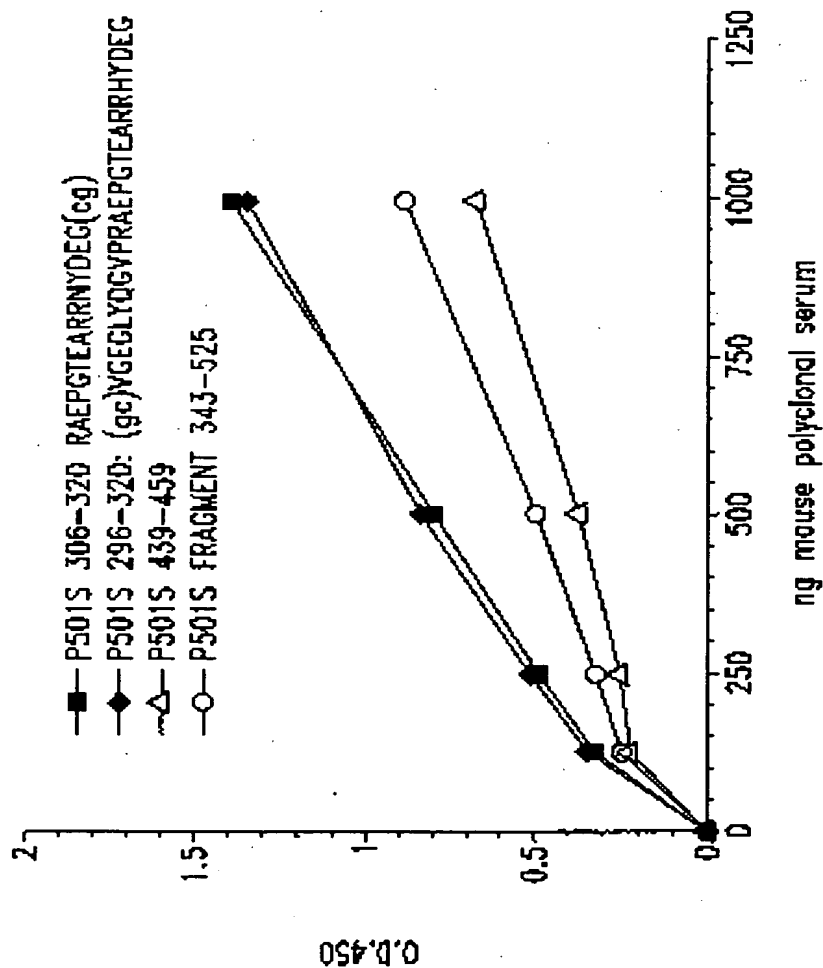


Fig. 11

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 Harlocker, Susan Louise
 Jiang Yuqiu
 Reed, Steven G.
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 Fanger, Gary
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tccatgctca	tctgattggg	aagttcatca	gacttttagtc	canntccctt	gatcagcagc	300
tcttagaact	ggggttctat	tgtccaaca	gccatgaatt	ccccatctgc	tgtcctgtaa	360
gtcgtataga	aaggtgctcc	accatccaac	atgttctgtc	ctcgaggggg	ggcccggtac	420
ccaattcgcc	ctatantgag	tcttattacg	cgcgctcact	ggcgcgtcgt	ttacaacgtc	480
gtgactggga	aaaccctggg	cgttaccaac	ttaatcgctt	tgcagracat	ccccctttcg	540
ccagctgggc	gtaatancca	aaaggccogc	accgatcgcc	cttccaacag	ttgogcaact	600
gaatgggnaa	atgggaaccc	cctgttaacc	ogcattnaac	ccccgcnngg	tttngttggt	660
accccacnt	nnacgctta	cactttgcca	ggccttanc	gcgcgctccc	tttccctttt	720
cttcccttcc	tttccnccn	ctttccccc	gggtttccgc	cntcaaaccc	ena	773

<210> 4

<211> 828

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (828)

<223> n = A,T,C or G

<400> 4

cctcctgagt	cctactgacc	tgtgctttct	ggtgtggagt	ccagggctgc	taggaaaagg	60
aatgggcaga	cacaggtgta	tgccaatggt	tctgaaatgg	gtataatttc	gtcctctcct	120
toggaacact	ggctgtctct	gaagacttct	cgctcagttt	cagtggaggac	acacacaaag	180
acgtgggtga	ccatgttggt	tgtgggggtgc	agagatggga	gggggtggggc	ccaccctgga	240
agagtggaca	gtgacacaag	gtggacactc	tctacagatc	actgaggata	agctggagcc	300
acaatgcctg	aggcacacac	acagcaagga	tgaactgtta	aacatagccc	acgtgtcct	360
gnnggcactg	ggaagcctan	atnaggccgt	gagcnaaag	aaggggagga	tccactagtt	420
ctanagcggc	cgccaccggg	gtgganctcc	ancttttgtt	ccctttagtg	agggttaatt	480
gcgcgcttgg	mtaatacatg	gtcatanctn	tttccctgtg	gaaattgtta	tccgctcaca	540
attccacaca	acatacganc	cggaacata	aantgtaaac	ctgggggtgc	taatgantga	600
ctaactcaca	ttaattgggt	tgcgtctact	gcgcgcttcc	caatcnggaa	acctgtcttg	660
ccncttgcat	tnatgaatcn	gccacccccc	ggggaaaagc	gtttgcgttt	tgggcgctct	720
tccgcttcct	cnctcantta	ntccctnnc	tcggtcattc	cggtgcngc	aaaccgggtc	780
accnctcca	aagggggtat	tccggtttcc	cnaatccgg	gganance		828

<210> 5

<211> 834

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (834)

<223> n = A,T,C or G

<400> 5

tttttttttt	tttttactga	tagatgggaat	ttattaagct	tttcacatgt	gatagcccat	60
agtttttaatt	gcattccaaag	tactaacaaa	aactctagca	atcaagaatg	gcagcatgtt	120
atttttataac	aatcaacccc	tgtggctttt	aaaatttggt	tttcataaga	taattttatac	180
tgaagttaaat	ctagccatgc	ttttaaaaaa	tgcttttaggt	cactccaaagc	ttggcagtta	240
acattttggca	taaacaaata	taaaacaatc	acaatttaat	aaataacaaa	tacaacattg	300
tagggcataa	tcataatcac	tataaggana	aggtggtagt	gttgagtaag	cagttattag	360
aatagaatac	cttggcctct	atgcaaatat	gtctagacac	tttgattcac	tcagccctga	420
cattcagttt	traaagttagg	agacagggtc	tcacagtatca	ttttacagtc	tccaacacat	480
tgaaaaacaag	tagaaaatga	tgagttgatt	tttattaatg	cattacatcc	tcaagagtta	540
tcaccaacccc	ctcagttcata	aaaaattttc	aagttatatt	agtcataata	ctcgggtgtgc	600
ttattttaaa	ttagtgttaa	atggattaag	tgaagacaaac	aatgggtccc	taatgtgatt	660
gatatttggtc	atttttacca	gtttctaaat	ctnaactttc	aggtttctga	actggaacat	720
tgnatnacag	tgttccanag	ctncaacctc	ctggaaacatt	acagtgtgct	tgattcaaaa	780
tgttattttgt	ttaaaactta	aatttttaacc	tgggtggaaaa	ataatttgaa	atna	834

<210> 6

<211> 818

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (818)

<223> n = A,T,C or G

<400> 6

tttttttttt	tttttttttt	aagacccctca	tcaatagatg	gagacataca	gaaatagtca	60
aaccacatct	acbaaatgcc	agtatcaggc	ggcggcctcg	aagccaaagt	gatgtttgga	120
tgtaaaagtga	aatattagtt	ggcggatgaa	gcagatagtg	aggaaggttg	agccaaataat	180
gacgtgaagt	cogtgggaagc	ctgtggctac	aaaaaatggt	gagccgtaga	tgcogtoggg	240
aatggtggaag	ggagactcga	agtaactctga	ggcttgtagg	agggtaaaat	agagacccag	300

taaaaattgta	ataagcagtg	cttgaatttat	ttgggtttcgg	ttgttttcta	ttagactatg	360
gtg gctcag	gtgattgata	ctcctgatgc	gagtaatacg	gatgtgttca	ggagtgaggac	420
ttctagggga	tttagcgggg	tgatgcctgt	tgggggccag	tgccctccta	gttgggggggt	480
aggggctagg	ctggagtggg	aaaaggctca	gaaaatcct	gcgaagaaaa	aaacttctga	540
ggtaataaat	aggattatcc	cgtatcgaag	gccttttttg	acagggtggg	tgtgggtggc	600
ttgggtatgt	ctttctcgtg	ttacatcgcg	ccatcatttg	tatatgggta	gtgtgttggg	660
ttantanggc	ctantatgaa	gaacttttgg	antggaaata	aatcaatngc	ttggccggaa	720
gtcattanga	nggctnaaaa	ggccttgcta	ngggctctgg	ctnggtttta	cccnacccat	780
ggaatncccc	ccccggacna	ntgnatccct	attctttaa			818

<210> 7

<211> 817

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{817}

<223> n = A,T,C or G

<400> 7

tttttttttt	tttttttttt	tggtctctaga	gggggttagag	gggggtgctat	agggtaaata	60
cgggccctat	ttcaaagatt	tttaggggaa	ttaattctag	gacgatgggt	atgaaactgt	120
ggtttgctcc	acagatttca	gagcattgac	cgtagtatac	ccccggctgt	gtagcgggtga	180
aagtggtttg	gttttagacgt	cggggaattg	catctgtttt	taagcctaata	gtggggacag	240
ctcatgagtg	caagacgtct	tgtgatgtaa	ttattatacn	aatggggggt	tcaatcggga	300
gtactactcg	attgtcaacg	tcaaggagtc	gcaggctggc	tggttctagg	aataatgggg	360
gaagtatgta	ggaaattgaag	atbaatccgc	cgtagtccgt	gttctcctcg	gttcaatacc	420
attgggtggc	aattgatttg	atggtaaggg	gagggatcgt	tgaactcgtc	tgttatgtaa	480
aggatncctt	ngggatggga	aggcnatnaa	ggactangga	tnaatggcgg	gcangatatt	540
tcaaacngtc	tctanttcct	gaaacgtctg	aaatgttaaa	aanaaattaa	tttngttatt	600
gaatnttng	gaaaagggtc	tacaggacta	gaacccaat	angaaaanta	atnntaangg	660
cnttatcntn	aaaggtnata	accnctccta	tnateccacc	caatngnatt	ccccacncnn	720
acnattggat	cccccaatgc	canaaanggc	ccccccccgg	tgnannccnc	cttttyttcc	780
cttnantgan	ggttattcnc	ccctngcnct	atcance			817

<210> 8

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{799}

<223> n = A,T,C or G

<400> 8

catltccggg	tttactttct	aaggaaagcc	gagcgggaagc	tgtcaacgtg	ggaatcggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagc	gggagagcga	ctccgagcgt	120
ctgaagcgca	ggtcccagaa	ggtggacttg	gcactgaaac	agctgggaca	catccgcgag	180
taogaacagc	gcctgaaagt	gctggagcgg	gaggtccagc	agtgtagccg	cgtcctgggg	240
tgggtggcog	angcctganc	cgtcttgcc	tgtgcctccc	angtgggccc	ccacccccctg	300
acctgcctgg	gtccaaacac	tgagccctgc	tggcggactt	caagganaac	ccccacangg	360
ggattttgct	cctanantaa	ggctcatctg	ggcctcggcc	cccccaacctg	gttggcccttg	420
tctttgagtg	gagccccatg	tccatctggg	ccactgtcng	gaccaccttt	ngggagtggt	480
ctccttaca	ccacannatg	ccgggtccct	ccgggaaccc	antccacanc	tnggaaggat	540
caagnccctg	atccactnnt	netanaaccc	gcncncccg	cngtgggaacc	cnccttntgt	600
tcctttctct	tnagggttaa	tnnccgcttg	gccttnccan	ngtccctncc	nttttccnnt	660

gttnaaattg ttangncccc	neennntccnn	ennennnenan	ccggaccenn	annttnnann	720
neetgggggt neennngat	tgaccenncc	neetntant	tgenttnggg	nnenttgcce	780
ctttccctct	nggganney				799

<210> 9
 <211> 801
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(801)
 <223> n = A,T,C or G

<400> 9						
acgccttgat	cctcccaggc	tgggactggt	cttggggagg	gccgggcatg	ctgtgggtttg	60
taangatgac	actcccaaaag	gtgggtcctga	cagtgggcca	gatggacatg	gggctcacet	120
caaggacaag	gccaccagggt	gcggggggccg	aagcccarat	gacccctact	ctatgagcaa	180
aatccctgt	gggggcttct	ccttgaagtc	cgccancagg	gctcagtctt	tggaccang	240
caggtcatgg	gggtgtngnc	caactggggg	ccncaacgca	aaanggonca	gggectcngn	300
cacccatccc	angaccgggc	tacactnctg	gacctccmc	tccaccactt	tcatgcgctg	360
ttcntaaccy	cgatntgttc	ccanctgttt	cngtgcenac	tecancttct	nggacgtgcg	420
ctacatacgc	cgggancnc	netcccgctt	tgteccctatc	cacgtncan	caacaaattt	480
cncctantg	caccnattee	caenttttnc	agntttccnc	nnngngcttc	cttntaaaag	540
ggttgancce	cggaaaatnc	ccccaaagggg	ggggggccngg	tacccaaactn	ccccctnata	600
gctgaanter	ccatnarcnn	gnetcnatgg	anccntccnt	tttaannacn	ttctnaactt	660
gggaanance	ctcgnccntn	ccccenttaa	tcccnccctg	cnangnnct	cccccnntcc	720
neennntng	gentntnann	cnaaaaaggc	cnnnnancaa	tctcctnnnn	cctcanttog	780
ccanccctcg	aaatcgccn	c				801

<210> 10
 <211> 789
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(789)
 <223> n = A,T,C or G

<400> 10						
cagtctatnt	ggccagtgtg	gcagctttcc	ctgtggctgc	cggtgccaca	tgcctgtccc	60
acagtgtggc	cgtggtgaca	gcttcagccg	ccctcaccgg	gttcaccttc	tcagccctgc	120
agatccctgcc	ctacacactg	gctcctctct	accacccggga	gaagcaggtg	ttcctgccca	180
aataccgagg	ggacactgga	ggtgctagca	gtgaggacag	cctgatgacc	agcttccctgc	240
caggccctaa	gcttgagct	cccttcctta	atggacacgt	gggtgctgga	ggcagtggcc	300
tgctccaccc	tccaccogcg	ctctgogggg	ccctctgctg	tgatgtctcc	gtacgtgtgg	360
tggtgggtga	gcccacogan	gccagggtgg	ttccgggccc	gggcctctgc	ctggacctcg	420
ccatccctgga	tgtgtcttcc	tgctgtccca	ngtggcccca	tccctgttta	tgggtcccat	480
tgctccagctc	agccagctctg	tcactgctta	tatgggtgtct	gcggcaggcc	tgggtctggt	540
ccatcttact	ttgctacaca	ggtantattt	gacaagaaag	antggcccaa	atactcagcg	600
ttaaaaaatt	ccagcaacat	tgggggtgga	aggcctgcct	cactgggtcc	aactccccgc	660
tctgtttaac	cccatggggc	tgcgggcttg	gcggccaatt	tctgttgcctg	ccaaantnat	720
gtggctctctc	gctgccacct	gttgcctggct	gaagtgcnta	cngcnanct	nggggggtng	780
ggngttccc						789

<210> 11
 <211> 772

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(772)

<223> n = A,T,C or G

<400> 11

ccccccctac	ccaaatatta	gacacccaaca	cagaaaagct	agcaatggat	tcccttctac	60
tttgtttaat	aaataagtta	aatattttaa	tgccctgtgc	tctgtgatgg	caacagaagg	120
accaacaggg	cacatcctga	taaaaggtaa	gaggggggtg	gatcagcaaa	aagacagtgc	180
tgtgggctga	ggggacctgg	ttcttgtgtg	ttgcccccca	ggactcttcc	cctacaaata	240
actttcattat	gttcaaatcc	catggaggag	tgtttcatcc	tagaaactcc	catgcaagag	300
ctacattaaa	cgaagctgca	ggttaagggg	cttanagatg	ggaaaccagg	tgactgagtt	360
tattcagctc	ccaanaaacc	ttctctaggt	gtgtctcaac	taggaggcta	gctgttaacc	420
ctgagcctgg	gtaatccacc	tcagagctcc	cgcattcca	gtgcatggaa	cccttctggc	480
ctccctgtat	aagtccagac	tgaaccaccc	ttggaaggnc	tccagtccag	cagccctana	540
aactggggga	aaaagaaaag	gagggcccan	ccccagctg	tgcactacg	caactcaaca	600
gcacaggggtg	gcagcraaaa	aaccacttta	ctttggcaca	aacaaaaact	ngggggggca	660
acccoggtac	cccnangggg	gttaacagga	ancngggnaa	cntgggaacce	aattnaggca	720
ggcccnccac	ccnaatnct	gttgggaat	tttctctccc	ctaaatttnt	tc	772

<210> 13

<211> 751

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(751)

<223> n = A,T,C or G

<400> 12

gccccaatte	cagctgccac	accacccacg	gtgaotgcat	tagttoggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tcttgagcct	tttgcttggt	gcagggttca	120
ttggctgtgt	tggtagctgt	gtcattgcaa	cagaatgggg	gaagggcact	gttctctttg	180
aagtanggtg	agtcctcaaa	atcogtatag	ttggtgaagc	cacagcactt	gagcccttcc	240
atgggtggtg	tccacacttg	agtgaagtct	tcttgggaac	cataatcttt	cttcatggca	300
ggcactacca	gcaacgtcag	ggaagtgtct	agccattgtg	gtgtacacca	aggcgaccac	360
agcagctgcn	acctcagcaa	tgaagatgan	gaggangatg	aagaagaacg	tcncgagggr	420
acaettgtct	tcagtcttan	caccatanca	gcccntgaaa	accaananca	aagaccacna	480
cncoggtctg	gatgaagaaa	tnaccccnog	ttgacaaaact	tgcattggcag	tggganccac	540
agtggccocna	aaaatctttca	aaaaggatgc	cccatcnatt	gaacccccaa	atgcccactg	600
ccaacagggg	ctgccccacn	cnchnaaoga	tganccnatt	gnacaagatc	tnentgggtct	660
tnatnaaent	gaacctgcn	tngtggctcc	tgttcaggnc	cnnggcctga	cttctnaann	720
aangaaecten	gaagncccca	cnngganann	g			751

<210> 13

<211> 729

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(729)

<223> n = A,T,C or G

<400> 13

gagccaggcg	ccccctctgcc	tgcccactca	gtggcaacac	ccgggagctg	ttttgtcctt	60
tgtggancct	cagcagtncc	ctctttcaga	actcantgcc	aaganccttg	aacaggagcc	120
accatgcagt	gcttcagctt	cattaagacc	atgatgaccc	tcttcaattt	getcatcttt	180
ctgtgtgggtg	cagccctggt	ggcagtgggc	atctgggtgt	caatcgatgg	ggcatccttt	240
ctgaagatct	tcggggccact	gtcgtccagt	gccatgcagt	ttgtcaacgt	gggtacttcc	300
ctcatcgccag	ccggcggttg	ggtcttagct	ctaggtttcc	tgggtgtgta	tgggtgctaag	360
actgagagca	agtgtgccct	cgtgaogtto	ttcttccatc	tcctccctcat	cttcattgct	420
gaggttgcaa	tgtgtgtggtc	gccttgggtg	acaccaaat	ggctgagcac	ctctgacgt	480
tgtgtgtaat	gcttgcctac	aanaaaagat	tatgggttcc	caggaaact	tcactcaagt	540
gttggaaacac	caccatgaaa	gggtcgaagt	gctgtggctt	cnnccaacta	tacggatttt	600
gaagantcac	ctacttcaaa	gaaaanagtg	cctttccccc	atctctgttg	caattgacaa	660
acgtcccca	cacagccaat	tgaaaacctg	cacccaaccc	aaanggggtcc	ccaaccanaa	720
attnaaggg						729

<210> 14

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (816)

<223> n = A,T,C or G

<400> 14

tgtcttctct	caaggttggt	cttgttgcca	taacaaccac	cataggtaaa	gcgggcgcag	60
tgttcgctga	aggggttgta	gtaccagcgc	gggatgctct	ccttgccagag	tcctgtgtct	120
ggcagggtcca	cgagtgccc	tttgtcactg	gggaaatgga	tgcgctggag	ctcgtcaaa	180
ccactcgtgt	atctttcaca	ggcagcctcg	tcogacgcgt	cggggcagtt	gggggtgtct	240
tcacactcca	ggaaaactgtc	natgcagcag	ccattgctgc	agcggaaactg	ggtgggctga	300
cangtgccag	agcacactgg	atggcgccct	tcctatgnan	gggcccctgng	ggaaagtccc	360
tganccecan	anctgcctct	caaaagcccc	accttgccca	ccccgacagg	ctagaatgga	420
atcttcttcc	cgaaggttag	ttnttcttgt	tgcaccaacc	anccccntaa	acaaaactctt	480
gcanaatctgc	tcognggggg	tctantacc	anogtgggaa	aagaacccca	ggcngcgaa	540
caancttggt	tggatncgaa	gcnataatct	ncntttctgc	ttgggtggaca	gcaccantna	600
ctgtmnanct	ttagnccntg	gtcctcntgg	gttgnncttg	aacctaatcn	ccnntcaact	660
gggacaaggt	aantngccnt	cctttnaatt	cccnanctn	ccccctgggtc	tgggggttttn	720
cncnctccta	ccccagaaan	ncogtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
cacaacctn	ccccacccac	gggttcngnt	ggttng			816

<210> 15

<211> 783

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (783)

<223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggcata	nacttgaagg	tacbaaccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagattgg	cgccactatgc	ggggtgacac	ggatgtcagg	gtagagagga	120
aagacccaaa	ccaggtggaa	ctgtggggac	tcaagggaag	cacctacctg	ttccagctga	180
cagtgaactag	ctcagaccac	ccagaggacc	cgcccaacgt	cacagtcact	gtgctgtcca	240
ccaagcagac	agaagactac	tgcctcgcat	ccaacaangt	gggtcgctgc	cggggctctt	300
tcccacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttcgtt	tatggaggct	360

gcttggggcaa	caagaacaa	taccttcggg	aaagaagagt	cattctance	tgtcnggggtg	420
tgaagggttg	gcctttigana	ngcanctctg	gggtcange	gaatttcccc	caggggccct	480
ccatggaaag	ggcccateca	ntgttctctg	gcacctgtca	ggccaccrag	ttccgctgca	540
ncaatggctg	ctgcatonac	antttectng	aattgtgaca	acacccccca	ntgcccccaa	600
ccctcccaac	aaagcttccc	tgttnaaaaa	tacnccant	ggcttttnac	aaacnccogg	660
cnctccntt	ttcccnntn	aaacaaaggg	netngcntt	gaactgccc	aaoccnngaa	720
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ccc						783

<210> 16
 <211> 801
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(801)
 <223> n = A,T,C or G

<400> 16						
gccccaatcc	cagctgccc	accacccacg	gtgactgcat	tagttcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tgtgagcct	tttgcttggt	gcagggtctca	120
ttggctgtgt	tggtgaogtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtaggggtg	agtcctcaaa	atccgtatag	ttggtgaagc	cacagcactt	gagccctttc	240
atggtgggtgt	tcacacattg	agtgaagtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	gaagtgtctc	gccattgtgg	tgtacaccaa	ggcgaccaca	360
gcagctgcaa	cctragcaat	gaagatgagg	aggaggatga	agaagaaogt	cnogagggga	420
cacttgctct	ccgtcttagc	accatagcag	cccangaaac	caagagcaaa	gaccacaacg	480
ccngctgcga	atgaasgaaa	ntacccacgt	tgacaaaactg	catggccact	ggargacagt	540
tggccagaa	atcttcagaa	aagggtatgc	ccatcgattg	aacacccana	tgcccactgc	600
cnacagggct	gcnccnccn	gaaagaatga	gccattgaag	aaggatcttc	ntggtcttaa	660
tgaactgaaa	ccntgcctgg	tggccctgt	tcagggtctct	tggtagtgaa	ttctganaaa	720
aagggaacngc	ntnagccccc	ccaaangana	aaacaccccc	gggtgttgcc	ctgaattggc	780
ggccaaggan	ccctgcccnn	g				801

<210> 17
 <211> 740
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(740)
 <223> n = A,T,C or G

<400> 17						
gtgagagcca	gggtccctc	tgcctgccc	ctcagtgcca	acaccogggg	gctgttttgt	60
cctttgtgga	gcctcagcag	ttccctcttt	cagaactcac	tgccaagagc	cctgaacagg	120
agccaccatg	cagtgtctca	gcttcattaa	gaccatgatg	atcctcttca	atttgtctat	180
ctttctgtgt	gggtcagccc	tgttggcagt	gggcactctg	gtgtcaatcg	atggggcctc	240
ctttctgaag	atcttcgggg	cactgtctgc	cagtgccatg	cagtttgtca	acgtgggcta	300
cttctctatc	gcagccggcg	ttgtgtgtct	tgtctcttgt	ttcttgggct	gctatgggtg	360
taagacygag	agcaagtgtg	ccctcgtgac	gttctctctc	atcctctctc	tcctctctat	420
tgtgtaagtc	gcagctgctg	tggctgcctc	gggtgtacac	acaatggctg	aaccattcct	480
gacgttgctg	gtantgctg	ccatcaanaa	agattatggg	ttcccaggaa	aaattcactc	540
aahtntggaa	caccnccatg	aaaagggctc	caattctctg	tggcttcccc	aactataccg	600
gaatttggaa	agantcncgc	tacttccaaa	aaaaaanant	tgccttttnc	ccnttctgt	660
tgcaatgaaa	acntcccaan	acngccaatn	aaaacctgcc	cnnncaaaaa	ggntcncaaa	720

caaaaaaant nnaagggttn

740

<210> 18
 <211> 802
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(802)
 <223> n - A,T,C or G

<400> 18
 ccgctgggttg cgctgggtcca gngnagccac gaagcacgtc agcatacaca gccccaatca 60
 caaggtctctc cagctgcgcg acattacgca gggcaagagc ctccagcaac actgcctatg 120
 ggatacactt tacttttagca gccagggtga caactgagag gtgtcgaagc ttattctctt 180
 gagcctctgt tagtggagga agattccggg cttcagctaa gtagtcagcg tatgtcccat 240
 aagcaaacac tgtgagcagc cggaaaggtag aggcaaatgc actctcagcc agctctctaa 300
 cattgggcat gtccagcagt tctccaaaca cgtagacacc agnnggcctcc agcacctgat 360
 ggatgagtggt ggccagcagt gcccctctgg cgcacttggc taggagcaga aattgtctct 420
 ggttctgccc tgtcaccttc acttccgcac tcatcactgc actgagtgtg ggggacttgg 480
 gctcaggatg tccagagacg tggttccgcc cctctcctta atgacacogn ccanncaacc 540
 gtcggctccc gccgantgng ttctgtctac ctgggtcagg gtctgtctgg cnetacttgc 600
 aancttctgc nggcccatgg aattcaccnc accggaaactn gtangatcca ctntttctat 660
 aaccggnccg caccgcnmtt ggaactccac tcttnttccc ttactttgag ggttaaggtc 720
 accctttnng ttaccttggt ccaaacctn centgtgtog anantgtnaa tcnggnccna 780
 tncancnc atangaagcc ng 802

<210> 19
 <211> 731
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(731)
 <223> n - A,T,C or G

<400> 19
 cnaagcttcc aggtnacggg ccgnaaanc tgaccnagg tancanaang cagnncggcg 60
 gagcccccgg tcaagngng gngtctttat nngagggggc ggagccacat cnetggacnt 120
 cntgacccra actcccncc ncnantgca gtgatgagt cagaactgaa ggtnacgtgg 180
 caggaaccaa gancaaannc tgcctcnntc caagtoggcn nagggggcgg ggtgggccac 240
 gmcacccnt cnagtgtgtn aaagcccnnc cctgtctact tgtttggaga acngcnnga 300
 catgcccagn gttanataac nggcnagag tnannttgc tctcccttc ggctgogcan 360
 cngntntgct tagnggacat aacctgacta cttaactgaa ccnngaate tncnccct 420
 ccaactaagt cagaacaaaa aacttcgaca ccaactcant gtcacctgnc tgrtcaagta 480
 aagtgtacco catncccaat gtntgctnga ngtctgnc tgcnttangt tgggtcttgg 540
 gaagacotat caattnaagc tatgtttctg actgctctt gctccctgna acaancnacc 600
 cnncnntcca agggggggnc ggcctccaat ccccccac ntnaattnan ttancccn 660
 ccccgnggc cggccttcta cnancntcn nnaacngggna aaacnnngc ttncccaac 720
 nnaatecncc t 731

<210> 20
 <211> 754
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{754}
 <223> n = A,T,C or G

<400> 20
 .tttttttttt tttttttttt taaaaacccc ctccatttaa tgnaaacttc cgaatttgc 60
 caaccccttc ntccaaatnn ccttttcgg gnggggggttc caaacccaan ttanntttgg 120
 annttaaat aaatnttntt tggngggnna anccnaatgt nangaaagt naaccanta 180
 tnancttnaa tncctggaaa ccngtngntt ccaaaatnt ttaaccotta antccctcgg 240
 aaatngttna nggaaaaccc aantctctnt aaggttgtt gaaggntnaa tnaaaanccc 300
 nccaattgt ttttngccac gctgaatta attggnctc gntgttttcc nttaaaanaa 360
 ggnnancccc ggttattnaa tccccccnnc ccaattata ceganttttt ttingaattgg 420
 gancccnccg gaattaacgg ggnnnntccc tnttgggggg cnggncccc cccctcggg 480
 ggttngggnc aggnccnaat tgtttaaggg tccgaaaaat cctccnaga aaaaaanctc 540
 ccaggntgag nntnggggtt nccccccccc cagggccctc ctognanagt tgggggttgg 600
 ggggcttgg atttcttttc ccttcttccc tccccccccc cngggganag aggttngagt 660
 tttgntcnnc ggcctccncc aaganctttn ceganttnan ttaatecct gcctngggca 720
 agtccnttgn agggntaaan ggcctccnnc cggg 754

<210> 21
 <211> 755
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{755}
 <223> n = A,T,C or G

<400> 21
 atcancatcat gacccnaac nngggacmc tcanccggnc nnnchaccnc cggccnatca 60
 nngtnagnnc actcnnttn nateacnccc cncnactac gcccnannc cnacgcncta 120
 nncanatncc actganngcg cngatngan ngagaaanct nataccanag ncaccanacn 180
 ccagctgtcc nanaangcct nnnatacngg nnnatccaat ntgnancctc cnaagtattt 240
 nncnncanct gatcttccctn anccgattac cctnccccc tancctctcc cccccaacna 300
 cgaaggcnct ggnccnaagg nngcgnccc ccgctagntc cccnccaagt cncncccta 360
 aactcanccn nattacncc tctntgagta tcactccccc aatctcacc tactcaactc 420
 aaaaanaten gatacaaat aatncaagcc tgnattatna actntgactg ggtctctatt 480
 ttagnggtcc ntnaancntc ctaatacttc cagctcncct tcnccaattt cnaanggct 540
 ctctcngaca gcatnttttg gttcccnntt ggggtcttan ngaattgcc tctntngaac 600
 gggctctctt tttccttggg ttancctggg tcnncgggc cagttattat tcccnctttt 660
 aaattctncc cttttanttt tggcttccna aacccccggc cttgaaaacg gcccctggg 720
 aaaaggttgt tttganaaaa tttttgtttt gtccc 755

<210> 22
 <211> 849
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{849}
 <223> n = A,T,C or G

<400> 22
 tttttttttt tttttangtg tngtoggca ggtagaggct tactacaant gtgaanacgt 60
 acgctnggan taangcgacc cganctctag gannccctt aaaatcanac tgtgaagatn 120

atcctgmnna	cggaanggtc	accggangat	nttgctaggg	tgncmctcc	cannncttn	180
cataactcng	nggccttgc	caccaccttc	ggcgccccng	ngnccgggce	cgggtcattn	240
gnnttaacch	cactnngcna	ncggtttccn	nocccnncng	accnnggoga	tcgggggtnc	300
tctgtcttcc	cctgnagnch	anaaantggg	cncgggnccc	ctttaacctt	nnacaagcca	360
cngcmtcta	nccncngccc	ccctccant	nngggggact	gcnanngct	ccgttctctg	420
nnaccccnmn	gggtncctcg	gttgctcgant	cnaccgnang	ccanggatcc	cnaagggaagg	480
tgggttnttg	gcccctaccc	ttegtctcgg	nncaaccttc	cggacnanga	ncggtcccg	540
cnenncgngg	cctcncctcg	caacacccgc	ntctctcngt	ncggnnnccc	ccccaccgc	600
nccctcnenc	ngnccgnancn	ctcncncnc	gtctcannca	ccaccccgcc	ccgcccaggcc	660
ntcanccaen	ggungacnng	nagcncntc	gncccgogcn	gcgnccctt	cgcncngaa	720
ctnctcngg	ccantnncgc	tcaanccnna	cnaaacggcg	ctgcggggcc	cynagcgncc	780
ncctccncca	gtcctcccg	cttcnacc	angnttccn	cgaggacacn	nnaccccgcc	840
nnccangcgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (872)

<223> n = A,T,C or G

<400> 23

ggcgaacta	tacttcgctc	gnactcgtgc	gcctcgtcnc	tcttttccctc	cgcaaccatg	60
tctgacnanc	cagattnggc	ngatatcnan	aagntoganc	agtcacaaact	gantaacaca	120
cacacnncan	aganaaatcc	netgccttcc	anagtanaqn	attggaacnng	agaaccange	180
nggcgaatcg	taatnaggcg	tgcgcogcca	atntgtcnc	gtttattntn	ccagctctnc	240
ctnccnacc	tacntcttcn	nagctgtcnn	acccctngtn	cgnacccccc	naggctcggga	300
tgggttctn	nttgaccgng	cnnccctcc	ccctctccat	nacgancnc	ccgcaccacc	360
nanngcncc	cccccgnnct	cttcgcnc	ctgtcctntn	ccctgtngc	ctggcnngn	420
acgcattga	ccctcgcnn	ctnccngaaa	nagnanacgt	ccgggttgmn	annancgctg	480
tgggnnngcg	tctgcnccgc	gttccctccn	nonnetccca	ccatcttct	tacngggctc	540
cenccgcctc	tcnncacnc	cctggggacgc	tnctctntgc	cccccttnac	tccccccctt	600
cgnctgmcc	cgncccccac	ntcatttnca	nacgtcttc	acaannccct	ggntnnctcc	660
cnancngnch	gtcanccnag	gggaaggngg	ggnnccnntg	nttgacgttg	ngngangtc	720
cgaanantcc	tcnccntcan	cncctacccct	cgggcggnct	ctcngttnc	aacttandaa	780
ntctccccc	ngngcnctc	tcagcctcnc	cnccccnct	ctctgcantg	tnctctgctc	840
tnaccnntac	gantnttcgn	cncctcttt	cc			872

<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (815)

<223> n = A,T,C or G

<400> 24

gcattgcaagc	ttgagtattc	tatagngtca	cctaaatanc	ttggcntaat	catggctenta	60
netgncttcc	tgtgtcaaat	gtatacnaa	tanatatgaa	tctnatntga	caaganngta	120
tctnctatta	gtacacantg	tnntgtccat	cctgtengan	cancttccca	tnnattnegn	180
cgcattcnch	gcnantatn	taatngggaa	ntcnntnnn	ncacnnccat	ctatctncc	240
gnccttgac	tggngagat	ggatnantt	tnntntgacc	nacatgttca	tcttgattn	300
aanaccccc	cgcnngccac	oggttngng	cnagccnntc	ccaagacctc	ctgtggagggt	360

aacctgogtc	aganncatca	aacntgggaa	acccgcnncc	angtnnaagt	ngnnncanan	420
gatcccgtec	aggnntnarc	atcccttcnc	agcgccccc	ttngtgccct	anagngnagc	480
gtgtccnanc	cncctaacat	ganacgcgcc	agnccanccg	caattnggca	caatgtcgnc	540
gaacccctca	gggggantna	tncaaanccc	cgggattgtc	cncncangaa	atcccnanc	600
ccnccctac	ccncttttg	gaengtgacc	aantcccgga	gtncacgtcc	ggcngnctc	660
ccccacgggt	nnccntgggg	gggtgaanct	cngnntcanc	cngncgaggn	ntcgnaaggga	720
acgggncctc	gngcgaanng	ancnntcnga	agncccnct	cgtataacce	ccctcncca	780
nccnacngnt	agntccccc	cngggtnogg	aangg			815

<210> 25

<211> 775

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(775)

<223> n = A,T,C or G

<400> 25

ccgagatgtc	tcgtcccggtg	gccttagctg	tgctogcgct	actctctctt	tctggcctgg	60
aggctatcca	gcgtactcca	aagattcagg	tttactcaog	tcateccagea	gagaatggaa	120
agtcaaaatt	ectgaattgc	tatgtgtctg	ggtttcatcc	atccgacatt	gaanttgact	180
tactgaagaa	tgganagaga	attgaaaaag	tggagcattc	agacttgtct	ttcagcaagg	240
actggctctt	ctatctctntg	tactacactg	aattcaccoc	cactgaaaaa	gatgagtatg	300
cctgcogtgt	gaaccatgtg	actttgtcac	agcccaagat	agttaagtgg	gategagaca	360
tgtaagcagn	cnnccatggaa	gtttgaagat	gccgcatttg	gattggatga	atcccaaat	420
ctgcttgcct	gcncttttaat	antgatatgc	ntatacaccc	taccctttat	gncccccraat	480
tgtaggggtt	acatnabtgt	tcnctntngga	catgatcttc	ctttataant	cncncttctg	540
aattgcccgt	cncncngctn	ngaattgttc	cnnasccacg	gttggtctcc	ccaggtcnc	600
tcttacggaa	gggcctgggc	cnccttncaa	gggtggggga	accnaaaatt	tcncttntgc	660
cncnccncca	cnnctcttng	nnccnctttt	ggaaaccttc	cnatccccc	tggcctcnna	720
nccttmtcta	aaaaaacttn	aanccgtngc	naaanatttn	acttccccc	ttacc	775

<210> 26

<211> 820

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(820)

<223> n = A,T,C or G

<400> 26

anattantac	agtgtaatct	tttcccagag	gtgtgtanag	ggaacggggc	ctagaggcat	60
cccnagata	ncctatance	acagtgcctt	gaccaagagc	tgctgggcac	atttccctga	120
gaaaagggtg	cggctccccat	cactcctcct	ctcccatagc	catcccagag	gggtgagtag	180
ccatcangcc	ttcggtggga	gggagtcang	gaaacaacan	accacagagc	anacagacca	240
ntgatgacca	tgggcggggag	ogagcctctt	ccctgnaccg	gggtgggcana	nganagccta	300
notgaggggt	cacactataa	acgttaacga	cnnagatnan	cacctgcttc	aagtgcaccc	360
ttcctacctg	acnaccagn	accnnnaact	gngcctgggg	gacagcctg	ggancagcta	420
acnnagcact	cacctgcccc	cccctggccg	tnccctctcc	cggtccctgnc	aaggggaagct	480
ccctgttggg	attncggggg	naaccaaggga	ncctccctcc	ccanctgtga	aggaaaaann	540
gatgggaatt	tncccttccg	gccnntcccc	tcttccctta	cacgccccct	mntactcnc	600
tcctctctct	ntccctgncnc	acttttnacc	cnnnatcttc	ccttnattga	tcggannctn	660
ganattccac	tnnccctcnc	cntcnatcng	naanaacnaaa	naetntctna	ccnggggat	720
gggnnccctg	ntcctccctct	cttttctcct	acnccennct	ccttgcctct	ccttngatca	780

tccaaacntc gntggccntn cccccccnnn tcccttnccc

820

<210> 27
 <211> 818
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (818)
 <223> n = A,T,C or G

<400> 27
 tctgggtgat ggcctcttcc tccctcaggga cctctgactg ctctgggcca aagaatctct 60
 tgtttcttct ccgagcccca ggcagcgggtg attcagcctt gcccacccctg attctgatga 120
 ctggggatgc tctgacggac ccaaggggga aatagggtcc cagggtccag ggagggggga 180
 ctgctgagca cttecgcccc tcaacctgac cagccctgac catgagctct gggtcgggtc 240
 tccgcctcca gggttctgct ctccangca ngccancaa gggcgtggg ccacactggc 300
 ttcttctgac cccctccctg gctctganc tctgtcttcc tgtcctgtgc angcnccttg 360
 gatctcagtt tccctcctc anngaactct gtttctgann tcttcantta actntgantt 420
 tatnaccnan tggnetgtac tgtcnnactt taatgggccc gaccggctaa tccctccctc 480
 nctcccttcc attcnnnna accncttnc cntctctcc cntancccg ccngggaaac 540
 ctcccttgcc ctaccangg gccnnnaccg cccntnnctn ggggggcnng gtnnctnenc 600
 ctgntnccc cctcncnnt tncctcgctc cccnnnccg nngcannktc nengtcccn 660
 tnnctcttcn ngntcgnaa ngntcncntn tnnnnngncc ngntnntncc tccctctenc 720
 cnnntgnang tnnntnnnn nngnncccc nnnnnnnnn nggnntnnn tctnccngc 780
 cccnnccccc ngnttaagg cctccnntct ccggcenc 818

<210> 28
 <211> 731
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (731)
 <223> n = A,T,C or G

<400> 28
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 tcccacatg anggtgnngt tctcttttga angagggttg ngtttttaon ccnggtgggt 120
 gattnaaccg ccttgctatg agnnaaagg tttcagggat ttttcggctc ttatcagkat 180
 ntanattcct gtnaatcgga aaatnatntt tcnncnggaa aatnttgctc ccatccgnaa 240
 attnctcccg ggtagtgcac nttngggggg cngccangtt tccagggtg ctanaatcgt 300
 actaaagntt naagtgggan tncaaatgaa aacctnncc agagnatccn taccogactg 360
 tnnnttncct tgcacctnbg actctgcnng agcccaatac ccngngnat gtcnccngn 420
 nnnngcncnc tgaanonne tcnnggctnn gancatcang gggttctgca tcaaaagcnn 480
 cgtttcncat naaggcactt tngcctcacc caaccnctng cctcnncca tttngccgtc 540
 nggttcnctt acgctnnctg cncctnnntn ganattttnc ccgctcnggg naancctcct 600
 gnaatgggta gggnccttnc ttttnaccnn gnggtntact aatnnctnc acgcntnctt 660
 tctnaccccc ccccttttt caatcccanc ggcnaatggg gtctccccc cngangggggg 720
 nnnccannc c 731

<210> 29
 <211> 822
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(822)
 <223> n = A,T,C or G

<400> 29
 actagtccag tgtggtggaa ttccattgtg ttgggggnenc ttctatgant antnttagat 60
 cgetcanacc teacancctc cncacnangc ctataangaa nannaataga nctgtncmnt 120
 atntntacnc teatannect cnnnacccac tccctettaa ccentactgt gccfatngen 180
 tnnctantct ntgcgcgcctn cnanccacn gtggggcnac cncnngnatt ctcnatctcc 240
 tcnccatntn gectananta ngtnccatcc ctatacctac nccaatgcta nnnctaanch 300
 tccatnantt annntaacta ccactgacnt ngactttcnc atnancctct aatttgaatc 360
 tactctgact cccacngcct annnattago ancntccccc nacnatntct caaccaaatc 420
 nteaaccacc tatctanctg ttenccacc attnccctccg atcccccnnac aaccccccctc 480
 ccaaatcccc nccacctgac ncctaagccn caccatcccg gcaagccnan gyncatttan 540
 ccactgggat cccnatngga naaaaaaac ccnaactctc tancncnnat ctccctaana 600
 aatnctcctn naatttactn ncantnccat caancccaen tgaaacnnaa cccctgtttt 660
 tanatccctt ctttcgaaaa ccnacccttt annncccaac ctttngggcc ccccnctnc 720
 ccnaatgaag gncncccaat cnangaaag nccntgaaaa anchaggcna anannntccg 780
 canatccctat cccctanttn ggggnccctt ncccnngggc cc 822

<210> 30
 <211> 787
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(787)
 <223> n = A,T,C or G

<400> 30
 cggccgcctg ctctggcaca tgcctcctga atggcatcaa aagtgatgga ctgcccatg 60
 cttagagaaga ccttctctcc tactgtcatt atggagccct gcagactgag ggctccctt 120
 gtctgcagga ttctgatgtct gaagtgtgg agtgtggctt ggagctcctc atctacatna 180
 gctggaagcc ctggaggggc tctctcgcca gctcccccct tctctcccaag ctctccangg 240
 acaccagggg ctccaggcag cccattatct ccagnangac atggtgtttc tccacgcgga 300
 cccatggggc ctgnaaggcc agggctctct ttgacacccat ctctcccgto ctgctggga 360
 ggcctggga tccactantt ctanaacggn ogccaccnag gtgggagctc cagcttttgt 420
 tcccttaat gaaggttaat tgcncgctg gcgtaatcat nggtcanaac tntttctgt 480
 gtgaaattgt tntccccc ncnattccnc ncnacatacn aacccggaan cataaagtgt 540
 taaagcctgg gggtngcctn nngaataaac tnaactcaat taattgogtt ggctcatggc 600
 ccgctttccn ttcnngaaaa ctgtentccc ctgcnttntt gaatcggcca ccccccnggg 660
 aaaagcgggt tgcnttttng ggggntcctt ccncttcccc cctcnctaan cccctnccct 720
 cggctcgtnc nggtngcggg gaangggnat nnnctccccc naagggggng agnnngtat 780
 ccccaaa 787

<210> 31
 <211> 799
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(799)
 <223> n = A,T,C or G

<400> 31

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tttttttttt tttttttggc gatgctactg ttttaattgca ggaggtgggg gtgtgtgtac      60
catgtaccag ggctattaga agcaagaagg aaggaggagag ggcagagcgc cctgctgagc      120
aacaaggac tctgcagcc ttctctgtct gtctcttggc gcaggccatc ggggaggcct      180
cccgagggtt gggggccacc agtccagggtt tgggagcact acanggggtg ggagtgggtg      240
gtggctggtt cnaatggcct gncacanac cctacgattc ttgacacctg gatttcacca      300
ggggaccctt tgttctccca nggnaacttc nttnatctcn aaagaacaca actgtttctt      360
cngcanttct ggctgttcat ggaaagcaca ggtgtccnat ttnggtggg acttggtaca      420
tatggttcog gccacacctt ccntcnaaa aagtaattca ccccccccn cctctnttg      480
cctgggccc taantaacca caccggactt canttanta ttcctcttng gntgggttg      540
ntnatcnccn cctgaangcg ccaagttgaa aggcacgcgc gtnccnctc cccatagnan      600
ntttttnntt canctaatgc cccccnggc aacnatcaa tcccccccn tggggggccc      660
agcccaangc ccccgctcgc gggnnccngn cncgnantcc ccaggntctc ccantcngnc      720
ccnnngcncc cccgcaogca gaacanaagg ntngagcnc cgcannnnnn nggttnnncac      780
ctgcccccc cccnngng

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<210> 32
<211> 789
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (789)
<223> n = A,T,C or G

```

```

<400> 32
tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt      60
tttttccnag ggcaggttta ttgacaacct cncgggacac aancaggctg gggacaggac      120
ggcaacaggc tccggcgggc gggcgggggg cctacacctg ggtaccaaat ntgcagcctc      180
cgctcccgct tgaatntcct ctgcagctgc aggatgcctt aaaacagggc ctgggccttn      240
ggtgggcacc ctgggatttn aatttccacg ggcacatgc ggtogcanc cctccaccac      300
nattaggaat agtggnttta cccnccnccg ttggcncact cccntggaa accacttntc      360
ggggtctcgg catctggtct taaaccttgc aaacnctggg gccctctttt tgggttantt      420
ncngccaca atcatnactc agactggcnc gggtggccc caaaaaancc ccccaaaacc      480
ggncatgtc ttncgggggt tgotgcnatn tncatcaact cccgggcnca ncaggncacac      540
ccaaaagtct ttngggcccn caaaaaanct cgggggggnc ccagtttcaa caaagtcac      600
cccttggcc cccaaatcct ccccccgntt nctgggtttg ggaacccacg cctctnctt      660
tggngggcaa gntggntccc ccttcggggc cccggtgggc cctnctctaa ngaaaacncc      720
ntcctnnnca ccatccccc nngnnacgnc tancaangna tccctttttt tanaaaoggg      780
ccccccncc

```

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<210> 33
<211> 793
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (793)
<223> n = A,T,C or G

```

```

<400> 33
gacagaacac gttggatggt ggagcacctt tctatacgac ttacaggaca gcagatgggg      60
aatcatggc tgttgaggra atanaacccc agttctacga gctgctgatc aaaggacttg      120
gactaaagtc tgatgaactt cccaatcaga tgagcatgga tgattggcca gaaatgaana      180
agaagtctgc agatgtattt gcaaagaaga cgaaggcaga gtggtgtcaa atctttgacg      240
gcacagatgc ctgtgtgact ccggttctga cttttgagga ggttggtcat catgatcaca      300
acaangaacg gggctcgttt atcaccantg aggagcagga cgtgagcccc cgccttgcac      360

```

ctctgctggt	aaacacccca	gccatccctt	ctttcaaaa	ggatccacta	cttctagagc	420
ggncgccacc	gcggtggagc	tcagctttt	gttcccttta	gtgagggtta	attgogcgct	480
tggogtaatc	atggtctatan	ctgtttcttg	tgtgaaattg	ttatccgctc	acaattccac	540
acaacatacg	anccggaagc	atnaaatctt	aaagcctggg	ggtngcctaa	tgantgaact	600
nactcacatt	aattggcttt	gcgctcaactg	cccgctttcc	agtccggaaa	acctgtcctt	660
gccagctgcc	nttaatgaat	cnggccaccc	cccggggaaa	aggcngtttg	cttnttgggg	720
cgccttccc	gctttctcgc	ttcctgaant	ccttcccccc	ggtctttcgg	cttgoggcna	780
acggtatcna	cct					793

<210> 34

<211> 756

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (756)

<223> n = A,T,C or G

<400> 34

gocgagaccg	gcattgtacga	gcaactcaag	ggcgagtggg	accgtaaaag	ccccaattctt	60
ancaagtgcg	gggaanagct	gggtcgactc	aaagtagttc	ttctggagct	caacttcttg	120
ccaaccacag	ggaccaagct	gaccaaacag	cagctaattc	tggcccggtg	catactggag	180
atogggggcc	aattggagcat	cctacgcaan	gacatccctt	ccttcgagcg	ctacatggcc	240
cagctcaaat	gctactactt	tgattacaan	gagcagctcc	cagagtcagc	ctatatgcac	300
cagctctctg	gcctcaacct	cctcttcttg	ctgtcccaga	accgggtggc	tgantccac	360
acggantttg	ancggtctgc	tgcccaanga	catacanacc	aattgtctaca	tcnaccacca	420
gtgtcctbga	gcaatctgga	tggangggcag	ctaccncaaa	gtnttctctg	ccnagggtta	480
catecccccgc	cgagagctac	accttcttca	ttgacatctt	gctcgacact	atcaggggatg	540
aaaatcgmg	ggttgctcca	gaaaggctnc	aanaanatcc	ttttcnctga	aggcccccgg	600
atnctctagt	ntagaatcg	gcccgcctac	gcggtgganc	ctccaaacct	tcgttncctt	660
ttactgaggg	ttnattgcgc	cccttggegt	tatcatggte	acnccngttn	cctgtgttga	720
aattnttaac	ccccacaaat	tccacgcena	catlmg			756

<210> 35

<211> 834

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (834)

<223> n = A,T,C or G

<400> 35

ggggatctct	anactnacct	gnatgcatgg	ttgtcgggtg	ggtcgctgtc	gatgaanatg	60
aacaggatct	tgccttgaa	gctctcggtt	gctgtnttta	agttgctcag	tctgcccgtca	120
tagtcagaca	cctctctggg	caaaaaacan	caggatntga	gtcttgattt	caacctccat	180
aatcttcnng	cgtgtctgct	cgttgaaactc	gatgaonang	ggcagctggg	tgtgtntgat	240
aaantccano	angttctcct	tggtagcttc	cccttcaaa	ttgttcgggc	cttctcaaa	300
cttctnnaan	angannanc	canctttgtc	gagrtggmat	ttggansaaca	cgtcactgtt	360
ggaaactgat	cccaaatgg	atgtcatcca	tcgctctgct	tgcttgcaaa	aaacttgctt	420
ggcncaaatc	cgaactcccn	tccttgaaa	aagccnatca	caccccccctc	cctggactcc	480
nncaangact	ctnccgctnc	ccntccnng	cagggttggg	ggcannccgg	gcccctgcgc	540
ttcttcagcc	agttccacnat	nttcatcagc	ccctctgcca	gctgtnttat	tccttggggg	600
ggaanccgct	ctcccttcc	tgaannaact	ttgacgctng	gaatagccgc	gentcncctt	660
acntnctggg	cgggttcaa	antccctccn	ttgncnntcn	cctcgggcca	ttctggattt	720
ncnnaacttt	tctctccccc	cncccnccgg	ngtttggntt	tttcatnggg	ccccaaactct	780

getnttggcc antccccctgg gggcntntan cccccctnt ggtcccntng ggc

834

<210> 36
 <211> 814
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (814)
 <223> n = A,T,C or G

<400> 36
 cggncgcttt cngcgcgcgc cccgtttcca tgacnaaggc tcccttcang ttaaatacnn 60
 cctagnaaac attaatgggt tgctctacta atacatcata cnaaccagta agcctgccc 120
 naacggccac tcaggccatt cctaccaaag gaagaaaggc tggctctctc acccctgtg 180
 ggaaggcct gcttgtgaag acaccacaat nccgctgaat ctnaagctct gtgttttact 240
 aatggaaaaa aaaaataaac aanaggtttt gttctcatgg ctgcccacog cagcctggca 300
 ctaaaacanc ccagcgctca cttctgcttg ganaaatatt ctttgcctt ttggacatca 360
 ggcttgatgg tatcactgcc acntttccac ccagctgggc ncccttcccc catntttgtc 420
 antganctgg aaggcctgaa ncttagtctc caaagctctc ngcccacaag accggccacc 480
 aggggangtc ntttncagtg gatctgccc anantaccn tatcatcnn gaataaaaag 540
 gccctgaac ganatgcttc cccanccct taagaccat aatccctngaa ccattggtgc 600
 ctccggtct gatccnaag gaatgttctt gggctccant cctcctttg ttcttacgt 660
 tgnnttgac cctgctngn atnaacaaan tganatccc ngaagcacc tncctctggt 720
 attgantt cttaaatct ctgcctacn nctgaaagca cnattccctn ggcncnaa 780
 gngaaactca agaaggtctn ngaaaaacca cncn 814

<210> 37
 <211> 760
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (760)
 <223> n = A,T,C or G

<400> 37
 gcatgctgct ctccctcaaa gttgttcttg ctgccataac aaccaccata ggtaaagcgg 60
 gcgcagtgtt cgtgaaggg gttgtagtac cagcgcgga tgctctcctt gcagagtcc 120
 gtgtctggca ggtccacgca atgccccttg tcaactggga aatggatgog ctggagctcg 180
 tcaanccac tegtgtattt ttcaacagca gctcctccg aagctccgg gcagtgggg 240
 gtgtcgtcac actccactaa actgtcgatn caccagccca ttgctgcagc ggaactgggt 300
 gggctgacag gtgccagaac acactggatn ggcctttcca tgggaagggc tgggggaaat 360
 cncctnanc caaactgcc ctcaaaggcc accttgcaca ccccgacagg ctagaatgc 420
 actctctctt ccaaggtag ttgttcttbt tgcccaagca ncctccanca aaccaaaanc 480
 ttgcaaaatc tgcctcgttg gggctcatnn taccanggtt ggggaaanaa acccggcngn 540
 gancnccctt gtttgaatgc naagynaata atcctcctgt ctgtcttggg tggaaagca 600
 caattgaact gttacnttg ggcgngttc cncctngggt gtctgaaact aatcacctg 660
 actggaaaaa ggtangtgc ttccctgaat tcccaantt cccctngntt tgggtnttt 720
 ctctctncc ctaaaaatcg tnttccccc cctangggc 760

<210> 38
 <211> 724
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (724)
 <223> n = A,T,C or G

<400> 38
 tttttttttt tttttttttt tttttttttt ttttttaaaa cccctcccat tgaatgaaaa 60
 ctccnnaaat tgtccaaccc cctcnnccaa atnncattt cggggggggg gtcccaaac 120
 caaattaatc tggganttta aattaaatnt tnattngggg aanaanccaa atgtnaagaa 180
 aatttaaccc attatnaact taaatnccctn gaaacccntg gnttccaaaa atttttaacc 240
 ctkaaatccc tccgaaattg ntaanggaaa accaaatton cctaaggctn tttgaagggt 300
 ngattttaaac ccccttnant tnttttnacc cnnngctnaa ntatttngnt tcoggtgttt 360
 tccntttaan cntnggtaac tcccgntaat gaannnccct aanccaatta aacogaattt 420
 tttttgaattt ggaaattccn ngggaattna cgggggtttt tcccnttttg gggccatncc 480
 cccnttttgg ggggttgggn ntagggtgaa ttttttnang ncccaaaaaa ncccccana 540
 aaaaaactcc caagnnttaa ttngaattnc ccccttccca ggccttttgg gaaaggnggg 600
 tttntggggg ccngggantt cnttcccccn ttncnccccc ccccccnggt aaanggttat 660
 ngnttttggg ttttgggccc cttanaggac ctccggatn gaaattaaat ccccggnog 720
 gccg 724

<210> 39
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (751)
 <223> n = A,T,C or G

<400> 39
 tttttttttt tttttttttg ctacacattta atttttattt tgattttttt taatgctgca 60
 caacacaaata tttatttcat ttgttttctt tatttcattt eatttggttg ctgctgctgt 120
 tttatttatt tttactgaaa gtgagaggga acttttgttg ccttttttcc tttttctgta 180
 ggccgcctta agctttctaa atttggaaca tctaagcaag ctgaanggaa aaggggggtt 240
 cgcacaaata ctggggggaa nggaaagggt gctttgttaa tcatgaccta tgggtgggtga 300
 ttaactgctt gtacaaattac ntttcacttt taattaattg tgcctnaangc ttaattana 360
 cttggggggt ccttccccc nccaaccccn ctgacaaaaa gtgcngccc tcaaatnatg 420
 tcccggnnt cnttgaaaca cccngcngaa ngttctcatt ntcccccnc caggtnaaaa 480
 tgaagggtta ccatntttaa cncacctcc acntggcnnn gcctgaatcc tcnaaaaan 540
 cctcaanncn aattnctnng ccccggtenc gentongtcc cnccggggt cggggaantn 600
 cccccccnga annnntnnc naacnaaatt ccgaaatat tccnntenc tcaattcccc 660
 cnnagactnt cctcnncnan cncattttct tttntntcag gaacnngnnc cnaaaatgn 720
 nnnnncctc cncngtccn naatnccan c 751

<210> 40
 <211> 753
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (753)
 <223> n = A,T,C or G

<400> 40
 gtgggtattt ctgtaagatc aggtgttcc cctctgagg tttagagga acacccctcat 60
 agatgaaaac ccccccagga cagcagcact gcaactgcc aacagccggg gtaggagggg 120

cgccctatgc	acagctgggc	ccttgagaca	gcagggttc	gatgtcagge	togatgtcaa	180
tggtctggaa	gaggcggtg	tacctgcgt	ggggcacacc	gtcagggtcc	accagggaact	240
tctcaaagtt	ccaggcaacn	tcgttgcgac	acacccggag	ccagggtgatn	agcttgggggt	300
cggtcataaa	cgcggtggcg	tcgtcgtctg	gagctggcag	ggcctcccg	aggaaggcna	360
ataaaagggtg	cgcgcgcgca	ccgttcacnt	cgcacttctc	naanaccatg	angttgggct	420
cnaaaccacc	accannccgg	acttcottga	nggaattccc	aaatctcttc	gntcttgggc	480
ttctnctgat	gcccctancg	gttgcccnng	atgccaanca	cccccaance	cgggggtcct	540
aaanacccon	cctcctcmtt	tcctctgggt	ttttctccc	ggacctgggt	tcctctcaag	600
ggancccata	tctcnaccan	tactcaccnt	ccccccent	gnnaccannc	cttctanngn	660
ttcccncccg	ncctctgggc	cttcasaan	gcttcacna	cctgggtctg	ccttccccc	720
tnccctatct	gnaccconcn	tttgtctcan	tnt			753

<210> 41
 <211> 341
 <212> DNA
 <213> Homo sapien

<400> 41	
actatctcca	tcacaaagga catgcttcat cccatagact tcttgacata gcttcaaatg 60
agtgaaccca	tccttgattt atatacatat atgttctcag tattttggga gcctttccac 120
ttcttttaaa	ccttgctcatt atgaacactg aaaataggaa tttgtgaaga gttaaaaagt 180
tataccttgt	ttacgtagta agtttttgaa gtctacattc aatccagaca cttagttgag 240
tgttaaactg	cgatttttaa aaaatatcat ttgagaatat cttttcagag gtattttcat 300
tttactttt	tgattcaattg tgttttatat attagggtag t 341

<210> 42
 <211> 101
 <212> DNA
 <213> Homo sapien

<400> 42	
acttactgaa	tttagttctg tgcctctcct tatttagtgt tgtatcataa ctactttgat 60
gtttcaaaaa	ttctaaataa ataattttca gtggcttcat a 101

<210> 43
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 43		
acatctttgt	tacagtctaa gatgtgttct taaatracca ttcttctctg gtctcacc 60	
tcagggttgg	tctacactg taattagagc tattgaggag tctttacagc aaattaagat 120	
tcagatgcct	tgctaagtct agagttctag agttatgttt cagaaagtct aagaaaccca 180	
cctcttgaga	ggtcagtaaa gaggacttaa ttttctatat ctacaaaatg accacaggat 240	
tggtatcaga	acgagagtta tcttgataa ctcagagctg agtacctgcc cgggggcgcg 300	
togaa		305

<210> 44
 <211> 852
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(852)
 <223> n = A,T,C or G

<400> 44

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acataaatat cagagaaaag tagtccttga aatatttaag tccaggagtt cttctgtttct 60
gattattttg tgtgtgtttt ggttctgtgc caa gtattg gcagcttcag ttttcatttc 120
ctctccatcc tcgggcatcc tccccaaatt tatataccag tcttcgtcca tccacacgct 180
ccagaatttc tcttttctag taatatctca tagctcggct gagcttttca taggtcatgc 240
tctgtttgtt cttcttttta ccccatagct gagccactgc ctctgatttc aagaacctga 300
agacgccctc agatcggctc tcccatttta ttaatcctgg gtctctgtct gggttcaaga 360
ggatgtcgcg gatgaattcc cataagttag tccctctcgg gtctgtcttc ttgggtgtggc 420
acttggcagg ggggtcttgc tcttttttca tatcaggtga ctctgcacaa ggaagggtgac 480
tggtgttgtt catggagatc tgagcccggc agaaagtttt gctgtccaac aaatctactg 540
tgctaccata gttggtgtca tataaantag tctngtcttt ccagggtgtc atgatggaag 600
gctcagtttg ttcagtcttg acaatgacat tgtgtgtgga ctggaacagg tcaactactgc 660
actggccgtt ccacttcaga tgcctgcaag tgcctgtagag gaggntgcctc gcgctccctg 720
cgcgccgggt gaactcctgc aaactcatgc tgcacagggtg ctgcgggttg atgtcgaaat 780
cntggaaagg gatacaattg gcctccagct ggttgggtgc caggagggtga tggagccact 840
ccacacctg gt 852

```

<210> 45
 <211> 234
 <212> DNA
 <213> Homo sapien

```

<400> 45
acaacagacc ctctgtcgtc aacgacctca tgcctatcaa gttggacgaa tccgtgtccg 60
agtctgacac catccggagc atcagcattg ctctgcagtg cctacccgcg gggaaactctt 120
gctctgtttc tggctggggg ctgctggcga acggcagaat gctacccgtg ctgcagtgcg 180
tgaacgtgtc ggtggtgtct gaggaggctc gcagtaagct ctatgaccgc ctgt 234

```

<210> 46
 <211> 590
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (590)
 <223> n = A, T, C or G

```

<400> 46
acttcttatt taaatgctta taaggcagat ctatgagant gatagaaaac atgggtgtgta 60
atttgatagc aatatttttg agattacaga gttttagtaa ttaaccaatc cacagttaaa 120
aagaagataa tatattccaa gcanatacaa aatatctaatt gaagatcaa ggcaggaaaa 180
tgantataac taattgacaa tggaaaatca attttaatgt gaattgcaca ttatccttta 240
aaagctttca aaanaaanaa ctattgcagt ctanttaatt caaacagtg taaatgggtat 300
caggataaan aactgaaggg canaaagaa taattttcac ttcatgtaac ncaaccanat 360
ttacaatggc ttaaatgcan ggaaaaagca gtggaagtag ggaagtanc aaggtctttc 420
tggtctctaa tctgccttac tctttgggtg tggctttgat cctctggaga cagctgccag 480
ggctcctgtt atatccacaa tcccagcagc aagatgaagg gatgaaaag gacacatgct 540
gccttccttc gaggagactt catctcactg gccaacactc agtcacatgt 590

```

<210> 47
 <211> 774
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (774)
 <223> n = A, T, C or G

<400> 47
 acaagggggc ataatgaagg agtggggana gatttttaag aaggaaaaaa aacgaggccc 60
 tgaacagaat ttctctgnac aacggggcct caaaataatt ttcttgggga ggttcaagac 120
 gcttcactgc ttgaaactta aatggatgtg ggacanaatt ttctgtaatg accctgaggy 180
 cattacagac gggactctgg gaggaaggat aaacagaaag gggacaaaag ctaatcccaa 240
 aacatcaaaag aaaggaagggt ggogtcatac ctcccagcct acacagttct ccagggctct 300
 cctcctccct ggaggaogac agtggaggaa caactgacca tgtccccagg ctctgtgtg 360
 ctggctctg gtcttcagcc ccagctctg gaagcccacc ctctgtgat cctggtggc 420
 ccacactcct tgaacacaca tcccaggtt atattcctgg acatggctga acctcctatt 480
 cctacttcg agatgccttg ctccctgcag cctgtcaaaa tccactcac cctccaaacc 540
 acggcatggg aagcctttct gaactgcctg attactccag catcttgga caatccctga 600
 ttccccactc cttagaggca agatagggtg gtttaagagta gggctggacc acttgagcc 660
 aggtctgtg ctccaattc ttgctcattt acgagctatg ggaacctggg caagtnatct 720
 teacttetat gggcctcatt ctgttctacc tgcaaatgg gggataataa tagt 774

<210> 48
 <211> 124
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}... (124)
 <223> n = A,T,C or G

<400> 48
 canaaattga aattttataa aaaggcattt ttctcttata tccataaaat gatataattt 60
 ttgcaantat aaaaatgtgt cacaatttat atgttccct aattacagct caacgcaact 120
 tggc 124

<210> 49
 <211> 147
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}... (147)
 <223> n = A,T,C or G

<400> 49
 gccgatgcta ctattttatt gcaggaggtg ggggtgtttt tattattctc tcaacagctt 60
 tgtggctaca ggtgggtgtc gaactgcatna aaaanttttt tccgggtgat tgcaaaaatt 120
 ttagggcacc catatcccaa gcantgt 147

<210> 50
 <211> 107
 <212> DNA
 <213> Homo sapien

<400> 50
 acattaaatt aataaaaggc ctgttggggg tctgctaata cacatggctt gatataattgc 60
 atggttttag gttaggaggg gttaggcata tgttttggga gaggggt 107

<210> 51
 <211> 204
 <212> DNA

<213> Homo sapien

<400> 51

gtcctaggaa	gtctagggga	cacacgactc	tgggggtcag	gggcccagac	acttgccagg	60
ggggaaggaa	aggcagagaa	gtgacacagt	caggggggaa	tgacagaaag	gaaaatcaag	120
gccttgcaag	gtcagaaagg	ggactcaggg	cttccaccac	agccctgccc	cacttgccca	180
cctccctttt	gggaccagca	atgt				204

<210> 52

<211> 491

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(491)

<223> n = A,T,C or G

<400> 52

acaaagataa	catttatctt	ataacaaaaa	tttgatagtt	ttaaagggtta	gtattgtgta	60
gggtattttt	caaaagacta	aagagataac	tcagggtaaa	agttagaaat	gtataaaaca	120
ccatcagaca	gggtttttaa	aaacacata	ttacaaaatt	agacaatcat	cottaaaaaa	180
aaaacttctt	gtatcaattt	cttttggtta	aaatgactga	cctaantatt	tttaaatatt	240
tcanaaacac	ttcctcaaaa	atbttcaana	tggtagrttt	canatgtncr	ctcagtcaca	300
atgttgctca	gataaataaa	tctcgtgaga	acttaccacc	caccacaaga	tttctggggc	360
atgcaacagt	gtcttttctt	ctctttttct	tttttttttt	ttacaggcac	agaaactcat	420
caattttatt	tggataacaa	agggtctcca	aattatattg	aaaaataaat	cgaagttaat	480
atcactcttg	t					491

<210> 53

<211> 484

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(484)

<223> n = A,T,C or G

<400> 53

acataattta	gcagggttaa	ttaccataag	atgctattta	ttaanaggtn	tatgatctga	60
gtattaacag	tggctgaggt	ttgggtattt	catgagcat	tttctttttg	ctttgataac	120
actacagaac	ccttaaggac	actgaaaatt	agtaagtaaa	gttcagaaac	attagctgct	180
caatcaaatc	tctacataac	actatagtaa	ttaaaaagtt	aaaaaaaagt	gttgaaatct	240
gcactagtat	anacogctcc	tgtcaggata	anactgcttt	ggacagaaa	gggaaaaanc	300
agctttgant	ttcttctgtc	tgatangagg	aaaggctgaa	ttaccttggt	gcctctccct	360
aatgattggc	aggtcnggta	aattccaaaa	cataattcaa	ctcaacactt	cttttcnccg	420
tanccttgant	ctgtgtattc	caggancagg	cggatggaaat	gggccagccc	ncggatgttc	480
cant						484

<210> 54

<211> 151

<212> DNA

<213> Homo sapien

<400> 54

actaaacctc	gtgcttggtg	actccataca	gaaaacgggtg	ccatccctga	acacgggtcg	60
ccactgggta	tactgctgac	aaccgcaaca	acaaaaacac	aaatcccttg	cactgggtcg	120

tctatgtcct ctcaagtgcc tttttgtttg t 151

<210> 55
<211> 91
<212> DNA
<213> Homo sapien

<400> 55
acctggcttg tctccgggtg gttcccggtg ccccccacgg tcccagaac ggacactttc 60
gacctccagt ggaactcga gccaaagtgg t 91

<210> 56
<211> 133
<212> DNA
<213> Homo sapien

<400> 56
ggcggatgtg cgttggttat atacaaatat gtcattttat gtaagggact tgagtatact 60
tggatttttg gtatctgtgg gttgggggga cggtcacgga accaataccc catggatacc 120
aagggacaac tgt 133

<210> 57
<211> 147
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(147)
<223> n = A,T,C or G

<400> 57
actctggaga acctgagcgg ctgctccggc tctgggatga ggtgatgcan gngtggcgc 60
gactggggagc tgagcccttc cttttgcgoc tgcctcagag gattgttgcc gacntgcana 120
tctcantggg ctggatncat gcaggggt 147

<210> 58
<211> 198
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(198)
<223> n = A,T,C or G

<400> 58
acagggatat aggtttcnaag ttattgttat tgtaaaatac attgaatttt ctgtatactc 60
tgattacata catttatcct ttaaaaaaga tgtaaatcct aatttttatg ccactatatta 120
atttaccat gagttacott gtaaatgaga agtcatgata gcactgaatt ttaactagtt 180
ttgacttcta agtttgggt 198

<210> 59
<211> 330
<212> DNA
<213> Homo sapi n

<400> 59

acaacaaatg ggttgtgagg aagtcttata agcaaaaactg gtgatggcta ctgaaaagat	60
ccattgaaaa ttatcattaa tgatttttaa tgacaagtta tcaaaaactc actcaatttt	120
cacctgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa	180
tacagtcaat aaatgacaaa gccagggcct acaggtgggt tcacagacttt ccagaaccag	240
cagaaggaaat ctattttatc acatggatct cgtctctgtg tcaaaatacc taatgatatt	300
ttctgtcttt attggaacttc ttgaagagt	330

<210> 60
 <211> 175
 <212> DNA
 <213> Homo sapien

<400> 60	
accgtgggtg cttctacat tcttgacggc tcttcacca acatctgggt ctacttcggc	60
gtcgtgggtc cttctcctt catctcctc cagctgggtg tgcctatoga ctttgcgcac	120
tcttggaaac agcgggtggt gggcaaggcc gaggagtgcg attcccgtag ctggt	175

<210> 61
 <211> 154
 <212> DNA
 <213> Homo sapien

<400> 61	
accccaattt tctcctgtg agcagtctgg acttctcact gctacatgat gaggtgagt	60
gggtgtgtgt cttcaacagt atctctccct ttcggatct gctgagccgg acagcagtgc	120
tggactgcac agccccgggg ctccacattg ctgt	154

<210> 62
 <211> 30
 <212> DNA
 <213> Homo sapien

<400> 62	
cgtctgagcc ctatagttag tegtattaga	30

<210> 63
 <211> 89
 <212> DNA
 <213> Homo sapien

<400> 63	
acaagtcatt tcagcaccct ttgctcttca aaactgacca tcttttatat ttaatgcttc	60
ctgtatgaat aaaaatgggt atgtcaagt	89

<210> 64
 <211> 97
 <212> DNA
 <213> Homo sapien

<400> 64	
accggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa gggtctgcag	60
aatcagtgc tccaggattg gtctttggat ctgggggt	97

<210> 65
 <211> 377
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(377)
 <223> n = A,T,C or G

<400> 65
 acaacaanaa ntcccttctt taggccactg atggaaacct ggaacccctt ttgatggca 60
 gcattggctc ctaggccttg acacagoggc tggggcttgg gctntcccaa accgcacacc 120
 ccaaccctgg tctacccaca nttctggcta tgggctgtct ctgccactga acatcagggc 180
 tcggtcctaa natgaatcc caanggggac agaggctcag agaggagct caatgagaaa 240
 ggtgctgttt gctcagccag aaaacagctg cctggcattc gccgctgaac tatgaacccg 300
 tgggggtgaa ctaccccccag gaggaatcat gcctggggca tgcaanggtg ccaacaggag 360
 gggggggagg agcatgt 377

<210> 66
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 66
 acgcctttcc ctccagaatto aggggaagaga ctgtogcctg ccttccctcg ttgttgcgtg 60
 agaacccgtg tgcccttcc caccatctcc accctcgtc catctttgaa ctcaaacacg 120
 aggaactaac tgcaccttg tctctctccc agtccccagt tcaacctcca tccctccact 180
 tcttcactc taagggatat caacactgcc cagcacaggg gccctgaatt tatgtggttt 240
 ttatatattt ttcaataaga tgcactttat gtcatttttt aataaagtct gaagaattac 300
 tgttt 305

<210> 67
 <211> 385
 <212> DNA
 <213> Homo sapien

<400> 67
 actacacaca ctccacttgc ccttgtgaga cactttgtcc cagcacttta ggaatgctga 60
 ggtcggacca gccacatctc atgtgcaaga ttgcccagca gacatcaggt ctgagagttc 120
 cctttttaa aaaggggact tgccttaaaa agaagtctag ccacgattgt gtagagcagc 180
 tgtgtctgtc tggagattca cttttgagag agttctctc tgagacctga tcttttagagg 240
 ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgcttg 300
 cctctcccag ggcccacagc tggccacacc tgcctacagg gcactctcag atgcccatac 360
 catagtttct gtgctagtgg accgt 385

<210> 68
 <211> 73
 <212> DNA
 <213> Homo sapien

<400> 68
 acttaaccag atatattttt accccagatg gggatattct ttgtaaaaaa tgaaaataaa 60
 gtttttttaa tgg 73

<210> 69
 <211> 536
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(536)

<223> n = A,T,C or G

<400> 69

actagtccag	tgtggtggaa	ttccattgtg	ttggggggctc	tcaccctcct	ctcctgcagc	60
tccagcttctg	tgtctctgct	ctgaggagac	catggcccag	catctgagta	ccctgctgct	120
cctgctgggc	acctagtctg	tggccctggc	ctggagcccc	aaggaggagg	ataggataat	180
cccgggtggc	atctataacg	cagacctcaa	tgatgagtg	gtacagcgtg	cccttcaactt	240
cggcattcagc	gagtataaca	agggccacca	agatgactac	tacagacgtc	cgtctgggggt	300
actaagagcc	aggcaacaga	ccgttggggg	ggtgaattac	ttcttcgacg	tagaggtggg	360
cogaaccata	tgtaccaagt	cccagcccaa	cttggacacc	tgtgccttcc	atgaacagcc	420
agaaotgcag	aagaaacagt	tgtgtctctt	cgagatctac	gaagtccct	ggggagaaca	480
gaangtccct	gggtgaaatc	caggtgtcaa	gaatctctan	ggatctgttg	ccagge	536

<210> 70

<211> 477

<212> DNA

<213> Homo sapien

<400> 70

atgaccccta	acagggggcc	tctcagccct	octaatgacc	tcgggcttag	ccatgtgatt	60
tcaattccac	tccataagcc	tcttcatact	aggectacta	accaacacac	taaccatata	120
ccaatgatgg	cgcgatgtaa	cacgagaaag	cacataccaa	ggccaccaca	caccacctgt	180
ccaaaaaggc	cttcgatacc	ggataatcct	atttattacc	tcagaagtct	ttttcttcgc	240
agggtatttt	ctgagccttt	taccactcaa	gcttagcccc	taccccccaa	ctaggagggc	300
actggccccc	aacaggccatc	accccgctaa	atccccctaga	agtcaccactc	ctaaacacat	360
ccgtattact	cgcattcagg	gtatcaatca	cctgagctca	ccatagtcta	atagaaaaca	420
acogaaacca	aattattcaa	agcactgctt	attacaattt	tactgggtct	ctattttt	477

<210> 71

<211> 533

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{533}

<223> n = A,T,C or G

<400> 71

agagctatag	gtacagtgtg	atctcagctt	tgcaaacaca	ttttctacat	agatagtact	60
aggattaat	agatatgtaa	agaaagaaat	cacaccatta	ataatggtaa	gattgggtta	120
tgtgatttta	gttgtatctt	tggcaccctt	atatatgttt	tccaaacttt	caggagtgat	180
attatttcca	taacttcaaa	agttagtttg	aaaaagaaaa	tctccagcaa	gcattctcatt	240
taaaataaag	tttgtcatct	ttaaaaatac	agcaatatgt	gacttttcaa	aaaagctgtc	300
aataggtgt	gacctacta	ataattatta	gaaatacatt	taaaaacatc	gagtacctca	360
agtcagtttg	ccttgaaaaa	tatcaaatat	aactcttaga	gaaatgtaca	taaaagaatg	420
cttcgtaatc	ttggagtang	aggttccctc	ctcaattttg	tattttttaa	angtaccatgg	480
taaaaaaaa	aattcacaac	agtatataag	gctgtaaaaa	gaagaattct	gcc	533

<210> 72

<211> 511

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{511}

<223> n = A,T,C or G

<400> 72

tattacggaa	aaacacacca	cataattcaa	ctancaaaga	anaactgttc	agggcgtgta	60
aatgaaagg	cttccaggca	gttatctgat	taaagaacac	taaaagaggg	acaaggctaa	120
aagccgcagg	atgtctacac	tatanccaggc	gctatttggg	ttggctggag	gagctgtgga	180
aaacatggan	agatttggtgc	tgganacgcg	cgtggctatc	cctcattgtt	attacanagt	240
gagggttctct	gtgtgccccac	tggtttgaaa	accgttctnc	aataatgata	gaatagtaca	300
cacatgagaa	ctgaaatggc	ccaaaccccag	aaagaaagcc	caactagatc	ctcagaanac	360
gcttctaggg	acaataaccg	atgaagaaaa	gatggcctcc	ttgtgcccc	gtctgttatg	420
atttctctcc	attgcagcna	naaacccggt	cttctaagca	caacnagggtg	atgatggcna	480
aaatacaccc	cctcttgag	naccnaggag	a			511

<210> 73

<211> 499

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (499)

<223> n = A,T,C or G

<400> 73

cagtgcacgc	actggtgcca	gtaccagtae	caataacagt	gccagtgcga	gtgcccagac	60
cagtgggtggc	ttcagtgctg	gtgccagcct	gaccgccact	ctcacatttg	ggctcttcgc	120
tggccttggt	ggagctgggt	ccagcaccag	tggcagctct	ggtgcctgtg	gttctctcta	180
caagtggagat	tttagatatt	gttaatcctg	ccagtcttct	tttccaagcc	aggggtgcac	240
ctcagaaccc	tactcaacac	agcactctag	gcagccacta	tcaatcaatt	gaagttgaca	300
ctctgcatta	aactctattg	ccattctctga	aaaaaaaaaa	aaaaaaaggg	cgccgcctog	360
antctagagg	gcccgtttta	acccgctgat	cagctctgac	tgtgccttct	anttgccagc	420
catctgttgt	ttgcccctcc	cccgntgcct	tccttgaccc	tggaaagtgc	cactccact	480
gtccttttct	aantaaat					499

<210> 74

<211> 537

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (537)

<223> n = A,T,C or G

<400> 74

tttcatagga	gaacacactg	aggagatact	tgaagaattc	ggattcagcc	gcgaagagat	60
ttatcagctt	aactcagata	aatcattga	agtaactaag	gtaaaagcta	gtctcttaact	120
tccaggcccc	eggetcaagt	gaatttgaat	actgcattta	cagtgtagag	taacacataa	180
cattgtatgc	atggaaacat	ggaggaaacg	tattacagtg	tcttaccact	ctaatacaaga	240
aaagaattac	agactctgat	tctacagtga	tgattgaatt	ctaaaaatgg	taatacattag	300
ggcttttgat	ttataaact	ttgggtactt	atactaaatt	atggtagtta	tactgccttc	360
cagtttgctt	gatatatattg	ttgatattaa	gattcttgac	ttatatattg	aatgggttct	420
actgaaaaan	gaatgatata	ttcttgaaaga	catogatata	catttattta	cactcttgat	480
tctacaatgt	agaaaatgaa	ggaaatgccc	caaattgtat	ggtagataaaa	gtccccgt	537

<210> 75

<211> 467

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(467)
 <223> n = A,T,C or G

<400> 75
 caaanacacat tgttcaaaag atgcaaatga tacactactg ctgcagctca caaacacctc 60
 tgcataattac acgtacctcc tectgctcct caagtagtgt ggtctatltt gccatcatca 120
 octgctgtct gcttagaaga acggctttct gctgcaangg agagaaatca taacagacgg 180
 tggcacaagg aggcacatct tctctcatcg gttattgtcc ctagaagcgt cttctgagga 240
 tctagtctgg ctttctttct gggtttgggc catttcantt ctcctgtgtg tactattcta 300
 tcatcttgtt ataacgggtt tcaaacnngt gggcacncag agaaccctac tctgtaataa 360
 caatgaggaa tagccacggt gatctccagc accaaatctc tccatgttnt tccagagctc 420
 ctccagccaa cccaaatago ogctgctatn gtgtagaaca tccctgn 467

<210> 76
 <211> 400
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(400)
 <223> n = A,T,C or G

<400> 76
 aagctgacag cattogggcc gagatgtctc gctccgtggc cttagctgtg ctccgctac 60
 tctctcttcc tggcctggag gctatccagc gtactccaaa gattcagggt tactcacgtc 120
 atccagcaga gaatggaaag tcaaatcttc tgaattgcta tctgtctggg ttccatccat 180
 ccgacattga agttgactta ctgaagcaat gagagagaat tgaanaagtg gagcattcag 240
 acttgtcttt cagcaaggac tggctcttct atctcttgta ctacactgaa ttcaccccca 300
 ctgaaaazaga tgagtatgco tgcctgttga accatgtgac tttgtcacag cccaagatng 360
 ttnagtggga toganacatg taagcagcan catgggagggt 400

<210> 77
 <211> 248
 <212> DNA
 <213> Homo sapien

<400> 77
 ctggagtggc ttgggtgttc aagcccttgc aggaagcaga atgcaccttc tgaggaacct 60
 ccagctggcc cggcggggga tggagggctc ggagcaccct tgcggggtg tgattgttgc 120
 caggcaactgt tcatctcagc ttttctgtcc ctttgcctcc ggcaagcgt tctgctgaaa 180
 gttcatactt ggagcctgat gtcttaacga ataaaggctc catgctccac ccgaaaaaaa 240
 aaaaaaaa 248

<210> 78
 <211> 201
 <212> DNA
 <213> Homo sapien

<400> 78
 actagtccag tctgggtggaa ttccattgtg ttggggccaa cacaatggct acctttaaca 60
 tcaaccagac ccggccctgc cctgccccca cgtgctgtct aacgacagta tgatgcttac 120
 tctgtacttc ggaaactatt tttatgtaat taatgtatgc ttctctgttt ataatgcct 180
 gattttaaaaa aaaaaaaaaa a 201

<210> 79
 <211> 552
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(552)
 <223> n = A,T,C or G

<400> 79
 tccttttctgtt aggttttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg 60
 ttttaggcagt gctagtaatt tctctgtaat gattctgtta ttactttcct attctttatt 120
 cctcttttctt ctgaagetta atgaagttga aaattgaggt ggataaatac aaaaaggtag 180
 tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcaaaatt 240
 atgcaagtta gtaattactc aggggttaact aaattacttt aatattgctgt tgaacctact 300
 ctgttctcttg gctagaaaaa attataaaca ggactttctt agtttgggaa gccaaattga 360
 taatattcta tgttctaaaa gttgggctat acctaaanta tnaagaaata tggaaattta 420
 ttccraggaa tatggggttc atttatgaat antacccggg anagaagttt tgantnaaac 480
 cngtttttgt taatacgtta atatgtctn aatnaacaag gcntgactta ttcccaaaaa 540
 aaaaaaaaaa aa 552

<210> 80
 <211> 476
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 80
 acagggattt gagatgctaa ggccccagag atcgtttgat ccaacctctt tattttcaga 60
 ggggaaaaatg gggcctagaa gttacagagc atctagctgg tgcgctggca cccctggcct 120
 caccacagact cccgagtagc tgggaactaca ggcacacagt cactgaagca ggccctgttt 180
 gcaattcacg ttgccacctc caacttaaac attcttcata tgtgatgtcc ttagtactta 240
 aggttaaac tttccaccca gaaaaggcaa cttagataaa atcttagagt actttcatac 300
 tcttctaagt cctcttccag cctcactttg agtcctcctt gggggttgat aggaantctc 360
 tcttggttt ctcaataaaa tctctatcca tctcatgttt aatttggtag gntcaaaaat 420
 gctgaaaaaa ttaaaatggt ctgggtttcnc tttaaaaaaa aaaaaaaaaa aaaaaa 476

<210> 81
 <211> 232
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(232)
 <223> n = A,T,C or G

<400> 81
 tttttttttg tatgcctctn ctgtggngtt attgttctgt ccaccttggg ggagccaggt 60
 ttcttctgta tttttctttt ctgggggagc ttcttggctc tgcctctcca ttcccagcct 120
 ctcatcccca ttttgcactt ttgtcagggt tggaggcgt ttcttggtag cccctcagag 180
 actcagtcag cgggaataag tcttaggggt ggggggtgtg gcaagccggc ct 232

<210> 82
 <211> 383
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(383)
 <223> n = A,T,C or G

<400> 82
 agggggggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc 60
 agtaccagta ccaataacat gccagtgcca gtgccagcac cagtgggtggc ttcaagtgcg 120
 gtgccagcct gaccgccact ctacacattg ggctcttcgc tggccttggg ggagctggg 180
 ccagcaccag tggcagctct ggtgcctgtg gtttctccta caagtggat tttagatatt 240
 gttaatcctg ccagtccttc cttccaagcc aggggtgcac ctcaaaaacc tactcaaac 300
 agcactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aactctattg 360
 ccatttcaca aaaaaaaaaa aaa 383

<210> 83
 <211> 494
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(494)
 <223> n = A,T,C or G

<400> 83
 accgaattgg gaccgctggc ttataagcga teatgtcttc cagtattacc tcaacggagca 60
 gggagatcga gtctatacga tgaagaaatt tgacccgatg ggacacaga cctgtctcagc 120
 ccatacctgct oggttctccc cagatgacaa ataactotga caccgcatca ccatacagaa 180
 aogcttcaag gtgtcctatga ccagcaacc gggccctgtc ctctgagggt cottaacctg 240
 atgtcttttc tggcactgtt taacctctgg agactcctga accaaactct tgggactgtg 300
 agccctgatg cttttttgcc agccatactc tttggcctcc agtctctcgt ggcgattgat 360
 tatgcttggtg tgaggcaatc atggtggcat caccocatnaa ggggaacacat ttganttttt 420
 tttencatat tttaatttac naccagaata ntccagaata aatgaattga aaaactotta 480
 aaaaaaaaaa aaaa 494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(380)
 <223> n = A,T,C or G

<400> 84
 gctggtagcc tatggcgtgg ccacggangg gctcctgagg caccgggacag tgacttccca 60
 agtatcctgc gccgcgtctt ctaccgtccc taactgcaga tcttcgggca gattccccag 120
 gaggacatgg acgtggccct catggagcac agcaactgct ogtcggagcc cggcttctgg 180
 gcacaccctc ctggggccca ggcgggcacc tgcgtctccc agtatgccaa ctggctgggtg 240
 gtgctgtctc tegtcatctt cctgctcgtg gccaacatcc tgcctggteac ttgctcattg 300
 ccatgttcag ttacacattc ggcaaagtac agggcaacag cnatctctac tgggaaggcc 360
 agcgttncgg cctcatcogg 380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (481)
 <223> n = A, T, C or G

<400> 85
 gagtttagctc ctccacaacc ttgatgaggt cgtctgcagt ggctctctcgc ttcataccgc 60
 tnccatcgct atactgtagg ttgcccacca cctctgcat ctggggcgcg ctaatatcca 120
 ggaaactctc aatcaagtca ccgtcnatna aacctgtggc tggttctgtc tcccgctcgg 180
 tgtgaaagga tctccagaag gagtgcctga tcttccccac acttttgatg actttattga 240
 gtcgattctg catgtccagc aggaggttgt accagctctc tgacagtga gtcaccagcc 300
 ctatcatgcc nttgaacgtg ccgaagaaca ccagaccttg tgtggggggg gnagtctcac 360
 ccagattctg cattaccaga naggcgtggc aaaaganatt gacaactcgc ccaggngaa 420
 aaagaacacc tcttggaagt gctngccgct cctcgccent tgggtggngc gcntnccctt 480
 t 481

<210> 86
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (472)
 <223> n = A, T, C or G

<400> 86
 aacatcttcc tgtataatgc tgtgtaatat cgatccgatn ttgtctgctg agaattcatt 60
 acttggaaaa gcaacttnaa gcttggacac tgglattnaa attcacaata tgcacacatt 120
 taacacgtgt gtcaatctgc tcccttaact tgtcatcacc agtctgggaa taagggtatg 180
 cccatttcac aacctgttaa agggcgctaa gcatttttga tccaacatct tttttcttga 240
 cacaagtcog aaaaaagcaa aagtaaacag ttntbaattt gttagccnat tcaatttctt 300
 catgggacag agccatttga tttaaaaagc aaattgcata atattgagct ttgggagctg 360
 atatntgagc ggaagantag cctttctact tcaccagaca caactccctt catattggga 420
 tgttnacnaa agttatgtct cttacagatg ggatgccttt gtgggaattc tg 472

<210> 87
 <211> 413
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (413)
 <223> n = A, T, C or G

<400> 87
 agaaaccagt atctctnaaa acaacctctc ataccttgtg gacctaatct tgtgtgogtg 60
 tgtgtgtgag cgcataattat atagacgggc acatcttttt tacttttgta aaagcttatg 120
 cctcttttgt atctatatct gtgaaagttt taatgatctg ccataatgtc ttgggggacct 180
 ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtrca tctagttngt 240
 ttatttcgac atgaaggaaa ttccagatn acaacctna caactctcc cttgactagg 300

```

ggggacaaag aaaagcanaa ctgaacatna gaaacaattn cctgggtgaga aattncataa 360
acagaatttg ggtngtatat tgaaananng catcattnaa acgttttttt ttt 413

```

```

<210> 88
<211> 448
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(448)
<223> n = A,T,C or G

```

```

<400> 88
cgcagcgggt cctctctatc tagctccage ctctcgcttg cccactccc cgcgtccgc 60
gtcctagccn accatggcgg ggccctgctg cgcctcgctg ccactcctgg 120
cgtggccctg gccgtgagcc ccgcggccgg ctccagctcc ggcaagccgc cgcgcctgg 180
gggaggccca tggacccccc gtggaagaag aaggtgtgct gcggtgcact gactttgcgc 240
tcggcnanta caacaaaccc gcaacnactt ttaccnagcn cgcgtgtgag gtbgtgcgc 300
cccaancaaa ttgttactng gggtaantaa ttcttggaa ttgaacctgg gccaaacnng 360
tttaccagaa ccnagccaat tngaacaatt nccctccat aacagcccc tttaaaaagg 420
gaancantcc tgnctctttt caaatctt 448

```

```

<210> 89
<211> 463
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(463)
<223> n = A,T,C or G

```

```

<400> 89
gaattttgtg cactggccac tgtgatggaa ccattgggcc aggatgcttt gagttcatca 60
gtagtgtatc tgccaaagtt ggtgttgtaa catgagtatg taaaatgtca aaaaattagc 120
agaggtctag gtctgcatac cagcagacag tttgtccttg tattttgtag ccttgaagtt 180
ctcagtgaca agtttnttct gatgcgaagt tctnattcca gtgttttagt cctttgcctc 240
tttnatgttn agacttgcct cttnaaatt gcttttgtnt tctgcaggta ctactgttg 300
tttaacraaa tagaannact tctctgcttn gaanatttga atatottaca cctnaaaatn 360
aattctctcc ccataannaa acccangccc ttggganaat ttgaaaaang gntccttcnn 420
aattcnana anttcagtnn tcatacaaca naacngganc ccc 463

```

```

<210> 90
<211> 400
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

```

```

<400> 90
agggattgaa ggtctnttnt actgtcggac tgttcaccca ccaactctac aagttgtgt 60
cttcactcca ctgtctgtaa gcntnttaac cragactgta tcttcataaa tagaacaaat 120
tcttcaccag tcacatcttc taggaccttt ttggattcag ttagcataag ctcttcact 180
tcctttgtta agacttcate tggtaaagtc ttaagtcttg tagaaaggaa tttaatgtgt 240

```

```

cgttctctaa caatgtcttc tcttgaagt atttggtga acaaccacc tnaagtcct 300
ttgtgcatcc atttkaata tacttaatag ggcattggtt tactagggtt aattctgcaa 360
gagtcattctg tctgcaaaag ttgogttagt atatctgcca 400

```

```

<210> 91
<211> 480
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (480)
<223> n = A,T,C or G

```

```

<400> 91
gagctcggat ccaataatch ttgtctgagg gcagcacaca tatncagtgc catggnaact 60
gggtctacccc acatgggagc agcatgccgt agntatataa ggtcattccc tgagtcagac 120
atgacctcttt gactacogtg tgccagtgcg ggtgattctc acacacctcc nncogctctt 180
tgtggaaaaa ctggcacttg nctggaaacta gcaagacatc acttacaaat tcacccacga 240
gcacttgaa aggtgtaaca aagcgactct tgcattgctt tttgtccctc cggcaccagt 300
tgtrataact aacccgctgg tttgcctcca tcacatttgt gatctgtagc tctggataca 360
tctcctgaca gtactgaaga actctctctt ttgtttcaaa agcaactctt ggtgcctgtt 420
ngatcaggtt cccatttccc agtcggaatg ttcacatggc ataenctact tcccacaaaa 480

```

```

<210> 92
<211> 477
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (477)
<223> n = A,T,C or G

```

```

<400> 92
atacagccca nateccacca cgaagatgog cttgttgact gagaacctga tgcggtcact 60
gggtccogctg tagcccccagc gactctccac ctgcttggaag cgggttgatgc tgcactcctt 120
cccacgcagg cagcagcggg gccggtcaat gaactccact cgtggcttgg ggttgacggt 180
taantgcagg aagaggctga ccacctcgog gtccaccagg atgcccgaact gtgcgggacc 240
tgcagogaaa ctctctgatg gtcabgagcg ggaagcgaat gangcccagg gccttgccca 300
gaacctctcg cctgttctct ggcgtcacct gcagctgctg ccgctnacac tgggcctcgg 360
accagcggac aaacggcggt gaacagccgc acctcacgga tgcccantgt gtcgcgctcc 420
aggaacggcn ccagcgtgtc caggtcaatg tcggtgaanc ctccgogggt aatggog 477

```

```

<210> 93
<211> 377
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (377)
<223> n = A,T,C or G

```

```

<400> 93
gaabgctgg accttgcttc gcattgtgtt gctggcagga ataccttggc aagcagctcc 60
agtccagca gccccagacc gctgccgccc gaagctaaag ctgcctctgg ccttcccttc 120
cgctcaatg cagaaccant agtgggagca ctgtgtttag agttaagagt gaacactgtt 180

```

tgattttact	tgggaatttc	ctctgttata	tagettttcc	caatgctaatt	ttccaaacaa	240
caacaacaaa	ataacatggt	tgcctgtttn	gttgtatata	agtangtgat	tctgtatnta	300
aagaaaatat	tactgttaca	tatactgctt	gcaantttctg	tatttattgg	enctctggaa	360
ataaatatat	tatttaa					377

<210> 94
 <211> 495
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(495)
 <223> n = A,T,C or G

<400> 94	
ccctttgagg	ggcttagggc
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	60
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	120
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	180
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	240
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	300
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	360
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	420
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	480
cgagctgang	cagatbccc
ccaaggaaaag	accaccttct
gaaggccccc	ttccggggct
aagaggaana	ggccctgant
tgcaagctca	ccaagggtcc
acacccaccc	agancancca
tggaactctng	tcccnnaagg
aaaaaaaaana	aaaaa
	495

<210> 95
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(472)
 <223> n = A,T,C or G

<400> 95	
ggttacttgg	tttcattgac
cctctggaag	ccttgogcag
tagctgtttt	gagttgatcc
tatttattat	cttgtgaaaa
atgatgaaaa	gcaatagata
atcggaaaaa	tgtggagtgt
ttggttattt	tattgtaaat
ttanttcana	taattttctt
	60
ggttacttgg	tttcattgac
cctctggaag	ccttgogcag
tagctgtttt	gagttgatcc
tatttattat	cttgtgaaaa
atgatgaaaa	gcaatagata
atcggaaaaa	tgtggagtgt
ttggttattt	tattgtaaat
ttanttcana	taattttctt
	120
ggttacttgg	tttcattgac
cctctggaag	ccttgogcag
tagctgtttt	gagttgatcc
tatttattat	cttgtgaaaa
atgatgaaaa	gcaatagata
atcggaaaaa	tgtggagtgt
ttggttattt	tattgtaaat
ttanttcana	taattttctt
	180
ggttacttgg	tttcattgac
cctctggaag	ccttgogcag
tagctgtttt	gagttgatcc
tatttattat	cttgtgaaaa
atgatgaaaa	gcaatagata
atcggaaaaa	tgtggagtgt
ttggttattt	tattgtaaat
ttanttcana	taattttctt
	240
ggttacttgg	tttcattgac
cctctggaag	ccttgogcag
tagctgtttt	gagttgatcc
tatttattat	cttgtgaaaa
atgatgaaaa	gcaatagata
atcggaaaaa	tgtggagtgt
ttggttattt	tattgtaaat
ttanttcana	taattttctt
	300
ggttacttgg	tttcattgac
cctctggaag	ccttgogcag
tagctgtttt	gagttgatcc
tatttattat	cttgtgaaaa
atgatgaaaa	gcaatagata
atcggaaaaa	tgtggagtgt
ttggttattt	tattgtaaat
ttanttcana	taattttctt
	360
ggttacttgg	tttcattgac
cctctggaag	ccttgogcag
tagctgtttt	gagttgatcc
tatttattat	cttgtgaaaa
atgatgaaaa	gcaatagata
atcggaaaaa	tgtggagtgt
ttggttattt	tattgtaaat
ttanttcana	taattttctt
	420
ggttacttgg	tttcattgac
cctctggaag	ccttgogcag
tagctgtttt	gagttgatcc
tatttattat	cttgtgaaaa
atgatgaaaa	gcaatagata
atcggaaaaa	tgtggagtgt
ttggttattt	tattgtaaat
ttanttcana	taattttctt
	472

<210> 96
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 96	
ctgaagcatt	tcttcaaaact
	60

```

gtgggtgaaat ttcaaaatta tatgttaactt ctactagttt tactttctcc cccaagtctt 120
ttttaactca tgattttttac acacacacac cagaacttat tatatagcct ctaagtcttt 180
atttcttcca gtatgtgatg aaagagtcct ccagtgctct gngcanaatg ttctagntat 240
agctggatac atacngtggg agttctataa actcatacct cagtgggact naaccsaat 300
tgtgttagtc tcaattccta ccacactgag ggagcctccc aaatcactat attcttatct 360
gcaggtaact ctccagaaa acngacaggg caggcttgca tgaaaaagtn acatctgogt 420
tacaagtct atcttctcca nangtctgtn aaggaacaat ttaatcttct agcttt 476

```

```

<210> 97
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{479}
<223> n = A,T,C or G

```

```

<400> 97
actctttcta atgtgatat gatcttgagt ataagaatgc atatgtcact agaattggata 60
aaataatgct gcaaaacttaa tgttcttatg caaaatggaa cgctaattgaa acacagctta 120
caatcgcaaa tcaaaaactca caagtgtctc tctgtttagt atttagtgta ataagactta 180
gattgtgctc cttcggatata gattgtttct canatcttgg gcaatntccc ttagtcaaat 240
caggctacta gaattctggt attggatatn tgagagcatg aaattttttaa naatacactt 300
gtgattatna aattaatcac aaatttcaact tatacctgct atcagcagct agaaaaacat 360
ntnnttttta natcaaatga ttttgtgttt ggaantgttn aaatgaaatc tgaatgtggg 420
ttcnatotta ttttttcccn gacnactant tnttttttta gggncatctc tganccatc 479

```

```

<210> 98
<211> 461
<212> DNA
<213> Homo sapien

```

```

<400> 98
agtgaactgt cctccaaaca aaccccttga tcaagtttgt ggcaactgaca atcagaccta 60
tgctagtccc tgtcatctat tcgctactaa atgcagactg gaggggacca aaagggggca 120
tcaactccag ctggattatt ttggagcctg caaatcatt cctacttgta cggactttga 180
agtattccag tttcctctac ggatgagaga ctggctcaag atatcctca tgcagcttta 240
tgaagccact ctgaacacgc tggttatcta gatgagaaca gagaataaa gtccagaaat 300
taccctggag aaaagaggct ttggctgggg accatcccat tgaaccttct ctttaaggact 360
ttaagaaaaa ctaccacatg ctgtgtatcc tgggagcggc cgtttatgaa ctgaccaccc 420
tttggaataa tcttgacgct cctgaacttg ctccctctgcg a 461

```

```

<210> 99
<211> 171
<212> DNA
<213> Homo sapien

```

```

<400> 99
gtggcgcgcg gcagggtgtt cctcgtaccg cagggccccc tcccttcccc aggrgtccct 60
cggcgccctc gcgggcccga ggaggagcgg ctggcggggtg gggggagtgt gacccaccc 120
cggtgagaan agccttctct agcatctga gaggcgtgcc ttgggggtac c 171

```

```

<210> 100
<211> 269
<212> DNA
<213> Homo sapien

```

<400> 100

cgcccgcaag	tgcaactcca	gctggggccg	tgccgacgaa	gattctgcca	gcagttggte	60
cgactgcgac	gacggcgccg	gcgacagtcg	cagggtgcagc	gcgggcgcct	ggggtcttgc	120
aaggctgagc	tgacgcgcga	gaggctcgtgt	cacgtccac	gaccttgacg	ccgtcgggga	180
cagccggaa	agagcccggt	gaagcgggag	gctcgggga	gcccctcggg	aaggcgccgc	240
cgagagatac	gcaggtgcag	gtggccgc				269

<210> 101

<211> 405

<212> DNA

<213> Homo sapien

<400> 101

tttttttttt	tttgggaatc	tactgcgagc	acagcaggtc	agcaacaagt	ttatttttga	60
gctagcaagg	caacagggta	gggcattggt	acatgttccg	gtcaacttcc	tttgtcgtgg	120
ttgatctgggt	tgtctttatg	ggggcggggt	ggggttaggg	aaacgaagca	aataacatgg	180
agtgggtgca	cctccctgt	agaacctggt	tacaaagctt	ggggcagttc	acctggctctg	240
tgacctgcac	tttcttgaca	tcaatgttat	tagaagtcag	gatctctttt	agagagtcca	300
ctgttcttga	gggagattag	ggtttcttgc	caaatccaac	aaatccact	gaaaaagttg	360
gatgatcagt	acgaataccg	aggcatatcc	tcatatcggg	ggcca		405

<210> 102

<211> 470

<212> DNA

<213> Homo sapien

<400> 102

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
ggcacttaac	ccatttttat	ttcaaaatgt	ctacaaatct	aatcccatta	tacggcatttt	120
tcaaaatcta	aattatctca	attagccaaa	tccttaccac	ataataccra	aaaatcaaaa	180
atatactttc	ttcagcaaac	ttgttacata	aattaaaaaa	atatatacgg	ctgggtgtttt	240
caaagtacaa	tatctttaac	actgcaaaac	ttttaaggaa	ctaaaataaa	aaaaaacact	300
cgcgaagggt	taaagggaac	aacaaattct	cttaccacac	cattataaaa	atcatatctc	360
aaatcttagg	ggaatctata	cttaccacgg	gatcttcaac	tttactcact	ttgtttattt	420
ttttaaacca	ttgtttgggc	ccaacacaa	ggaatcccc	ctggactagt		470

<210> 103

<211> 581

<212> DNA

<213> Homo sapien

<400> 103

tttttttttt	tttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttatttttact	60
tacacatatt	tattttataa	ttgggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataatto	ttaggaatta	gcttaaaatc	tgcctaaagt	180
gaaaatcttc	tctagctctt	ttgactgtac	atttttgaat	cttgtaaaac	atcccaattc	240
atttttcttg	tttttaaaat	tatctaattc	ttccattttt	ttccatttcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaaa	ggaagagaaa	tggcacacaa	aacaaacatt	ttatattcat	atttctacct	420
acgttaataa	aatagcattt	tgtgaagcca	gctcaaaaag	aggcttagat	ccttttatgt	480
ccatttttagt	caactaaacg	tatcaaaagt	ccagaatgca	aaagggttgt	gaacatttat	540
tcaaaagcta	atataagata	tttcacatac	tcatctttct	g		581

<210> 104

<211> 578

<212> DNA

<213> Homo sapien

<400> 104

tttttttttt	tttttttttt	tttttttttt	tttttttttt	gaaatgagga	togagtcttt	60
cactctctag	atagggcctg	aagaaaaactc	atctttccag	ctttaaaaata	acaatcaaat	120
ctctctatgt	atatcatatt	ttaagttaaa	ctaattgagtc	actgggttat	cttctcctga	180
aggaatcttg	ttcattcttc	tcattcatat	agttatatca	agtactacct	tgcatactga	240
gagggttttt	ttctctatatt	acacatatac	ttccatgtga	atbtgtatca	aacctttatt	300
ttcatgcaaa	ctagaaaaata	atgtttcttt	tgcataagag	aagagaaaca	tatagcatta	360
caaaactgct	caaatctgtt	gttaagttat	ccattataat	tagttggcag	gagctaatac	420
aaatcacatt	tacgacagca	atcataaaa	tgaagtacca	gttaaatatc	caaatcaatt	480
aaaggaaact	ttttagcctg	ggtataatta	gctaattcac	cttacaagca	tttacttgaa	540
tgaattcaca	tgttattatt	cttagcccaa	cacaatgg			578

<210> 105

<211> 538

<212> DNA

<213> Homo sapien

<400> 105

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<210> 106

<211> 473

<212> DNA

<213> Homo sapien

<400> 106

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<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

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a

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<210> 108
<211> 382
<212> PRT
<213> Homo sapien

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<400> 108
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Arg Val Asp Arg Pro Gly Ser Arg Tyr Asp Val Ser Arg Leu Gly Arg
35      40      45
Gly Lys Arg Ser Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
50      55      60
Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
65      70      75      80
Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
85      90      95
Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
100      105      110
Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
115      120      125
Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
130      135      140
Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
145      150      155      160
Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
165      170      175
Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
180      185      190
Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Glu Ala Pro Arg
195      200      205
Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
210      215      220
Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
225      230      235      240
Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
245      250      255

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Asn Gln Met Ser Met Asp Asp Trp Pro Glu Met Lys Lys Lys Phe Ala
 260 265 270
 Asp Val Phe Ala Lys Lys Thr Lys Ala Glu Trp Cys Gln Ile Phe Asp
 275 280 285
 Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
 290 295 300
 His His Asp His Asn Lys Glu Arg Gly Ser Phe Ile Thr Ser Glu Glu
 305 310 315 320
 Gln Asp Val Ser Pro Arg Pro Ala Pro Leu Leu Leu Asn Thr Pro Ala
 325 330 335
 Ile Pro Ser Phe Lys Arg Asp Pro Phe Ile Gly Glu His Thr Glu Glu
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 Ile Leu Glu Glu Phe Gly Phe Ser Arg Glu Glu Ile Tyr Gln Leu Asn
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<210> 109
 <211> 1524
 <212> DNA
 <213> Homo sapien

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<210> 110
 <211> 3410
 <212> DNA
 <213> Homo sapien

<400> 110
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<210> 111

<211> 1289

<212> DNA

<213> Homo sapien

<400> 111

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<210> 112

<211> 315

<212> PRT

<213> Homo sapien

<400> 112

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Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr Gly Val Ala
35     40     45
Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser Ile Leu
50     55     60
Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly Gln Ile Pro
65     70     75     80
Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn Cys Ser Ser
85     90     95
Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala Gly Thr Cys
100    105    110
Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu Leu Val Ile Phe
115    120    125
Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu Leu Ile Ala Met Phe
130    135    140
Ser Tyr Thr Phe Gly Lys Val Gln Gly Asn Ser Asp Leu Tyr Trp Lys
145    150    155    160
Ala Gln Arg Tyr Arg Leu Ile Arg Glu Phe His Ser Arg Pro Ala Leu
165    170    175
Ala Pro Pro Phe Ile Val Ile Ser His Leu Arg Leu Leu Leu Arg Gln
180    185    190
Leu Cys Arg Arg Pro Arg Ser Pro Gln Pro Ser Ser Pro Ala Leu Glu

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195	200	205
His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr		
210	215	220
Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp		
225	230	235
Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val		
245	250	255
Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg		
260	265	270
Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly		
275	280	285
Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly		
290	295	300
Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp		
305	310	315

<210> 113
 <211> 553
 <212> PRT
 <213> Homo sapien

<400> 113

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Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val	
35 40 45	
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly	
50 55 60	
Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly	
65 70 75 80	
Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile	
85 90 95	
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu	
100 105 110	
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly	
115 120 125	
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu	
130 135 140	
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala	
145 150 155 160	
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr	
165 170 175	
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu	
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Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu	
195 200 205	
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly	
210 215 220	
Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His	
225 230 235 240	
Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu	
245 250 255	
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260 265 270	
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275 280 285	

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 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 305 310 315 320
 Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
 325 330 335
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
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 Ala Val Tyr Leu Ala Ser Val Ala Phe Pro Val Ala Ala Gly Ala
 355 360 365
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
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 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
 385 390 395 400
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
 405 410 415
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
 420 425 430
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
 435 440 445
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser
 450 455 460
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
 465 470 475 480
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 485 490 495
 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
 500 505 510
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
 515 520 525
 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
 530 535 540
 Lys Ser Asp Leu Ala Lys Tyr Ser Ala
 545 550

<210> 114
 <211> 241
 <212> PRT
 <213> Homo sapien

<400> 114
 Met Gln Cys Phe Ser Phe Ile Lys Thr Met Met Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ile Phe Leu Cys Gly Ala Ala Leu Leu Ala Val Gly Ile Trp Val
 20 25 30
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
 35 40 45
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
 50 55 60
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
 65 70 75 80
 Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile
 85 90 95
 Phe Ile Ala Glu Val Ala Ala Ala Val Val Ala Leu Val Tyr Thr Thr
 100 105 110
 Met Ala Glu His Phe Leu Thr Leu Leu Val Val Pro Ala Ile Lys Lys
 115 120 125
 Asp Tyr Gly Ser Gln Glu Asp Phe Thr Gln Val Trp Asn Thr Thr Met

130	135	140
Lys Gly Leu Lys Cys Cys Gly Phe Thr Asn Tyr Thr Asp Phe Glu Asp		
145	150	155
Ser Pro Tyr Phe Lys Glu Asn Ser Ala Phe Pro Pro Phe Cys Cys Asn		160
	165	170
Asp Asn Val Thr Asn Thr Ala Asn Glu Thr Cys Thr Lys Glu Lys Ala		175
	180	185
His Asp Gln Lys Val Glu Gly Cys Phe Asn Gln Leu Leu Tyr Asp Ile		190
	195	200
Arg Thr Asn Ala Val Thr Val Gly Gly Val Ala Ala Gly Ile Gly Gly		205
	210	215
Leu Glu Leu Ala Ala Met Ile Val Ser Met Tyr Leu Tyr Cys Asn Leu		220
225	230	235
Gln		240

<210> 115
 <211> 366
 <212> DNA
 <213> Homo sapien

<400> 115
 getctttctc tcccctctc tgaatttaac tctttcaact tgcaatttgc aaggattaca 60
 catttcaactg tgatgtatat tgtgttgcaa aaaaaaaaaa gtgtctttgt ttaaaattac 120
 ttggtttgtg aatccatctt gctttttccc catttgaact agtcattaac ccctctctga 180
 actggttagaa aaacatctga agagctagtc tctcagcctc tgacagggtga attggatggc 240
 tctcagaacc atttcarcca gacagcctgt ttctatcctg tttataaat tagtttgggt 300
 tctctacatg cataacaaac cctgctccaa tctgtcacat aaaagtctgt gacttgaggt 360
 ttagtc 366

<210> 116
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...[282]
 <223> n = A,T,C or G

<400> 116
 acaaagatga accatttccct atatttatgc aaaattaaaa tctaccctga ttctaattatt 60
 gagaaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa 120
 agactttact attttcatat tttaagacac atgatttacc ctatttttagt aacctgggtc 180
 ctacgttaaa caaaggataa tgtgaacagc agagaggatt tgttggcaga aaatctatgt 240
 tcaatctnga actatctana tcacagacat ttctattcct ct 282

<210> 117
 <211> 305
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...[305]
 <223> n = A,T,C or G

<400> 117


```

acacatgtcg cttcaactgcc ttcttagatg cttctgggtca acatanagga acagggacca      60
tattttatcct ccttcctgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa      120
aataaggcaa aatatatgaa acaacaggtc tggagatatt ggaatcagt caatgaagga      180
tactgatccc tgatcactgt cctaattgcg gatgtgggaa acagatgagg tcacctctgt      240
gaetgcccca gcttactgcc tgtagagagt tttctangctg cagttcagac agggagaaat      300
tgggt                                           305

```

<210> 118

<211> 71

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(71)

<223> n = A,T,C or G

<400> 118

```

accaagggtgt ntgaactctct gacgtgggga tctctgactc ccgcacaatc tgagtggaaa      60
aantcctggg t                                           71

```

<210> 119

<211> 212

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(212)

<223> n = A,T,C or G

<400> 119

```

actccgggttg gtgtcagcag caggtggcat tgaacatngc aatgtggagc ccaaacccaca      60
gaaaatgggg tgaaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac      120
agtaagctgg cccttctaata aaagaaaaat tgaaaggttc ctcaactaanc ggaattaant      180
aatggantca agaaactccc aggcctcagc gt                                           212

```

<210> 120

<211> 90

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(90)

<223> n = A,T,C or G

<400> 120

```

actcgttgca natcaggggc cccccagagt caccgttgca ggagtccttc tgggtcttgc      60
ctccgcgggc gcagaacatg ctgggggtgg                                           90

```

<210> 121

<211> 218

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (218)

<223> n = A,T,C or G

<400> 121

tgtanogtga	anaogacaga	naggggtgtc	aaaaatggag	aanccttgaa	gtcattttga	60
gaataagatt	tgctaaaaga	tttggggcta	aaacatgggt	attgggagac	atttctgaag	120
atatncangt	aaattangga	atgaattcat	ggttcttttg	ggaattcctt	taogatngcc	180
agcatanaet	testgtgggg	atancagcta	cccttgta			218

<210> 122

<211> 171

<212> DNA

<213> Homo sapien

<400> 122

taggggtgta	tgcaactgta	aggacaaaaa	ttgagactca	actggcttaa	ccaataaagg	60
catttggttag	ctcatgggac	aggaagtcgg	atgggtggggc	atcttcagtg	ctgcatgagt	120
caccaccccg	gcgggggtcat	ctgtgccaca	ggtcctctgtt	gacagtgcgg	t	171

<210> 123

<211> 76

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (76)

<223> n = A,T,C or G

<400> 123

tgtagogtga	agacnacaga	atgggtgtgtg	ctgtgctatc	caggaaacaca	ttattatcca	60
ttatcaanta	ttgtgt					76

<210> 124

<211> 131

<212> DNA

<213> Homo sapien

<400> 124

acctttcccc	aaggccaatg	tctgtgtgtc	taactggcgg	gctgcaggac	agctgcaatt	60
caatgtgctg	ggcctatg	aggggaggag	actctaaaat	agccaatttt	attctcttgg	120
ttaagatttg	t					131

<210> 125

<211> 432

<212> DNA

<213> Homo sapien

<400> 125

actttctcta	ctggctatga	aatagatgg	ggaaaattgc	gttaccact	ataccactgg	60
cttgaaaaag	aggtgatagc	tcttcagagg	acttgtgact	tttgctcaga	tgctgaagaa	120
ctacagtctg	cattttggcag	aaatgaagat	gaattttggat	taaattgagga	tgctgaagat	180
ttgcctcacc	aaacaaaagt	gaaacaactg	agagaaaact	ttcaggaaaa	aagacagtgg	240
ctcttgaagt	atcagtcact	tttgagaatg	ttctcttagtt	actgcatact	tcattggatcc	300
catgggtggg	gtcttgcatc	tgtaagaatg	gaattgattt	tgctttttgca	agaatctcag	360
caggaaacat	cagaaccact	attttctagc	cctctgtcag	agcaaacctc	agtgcccttc	420
ctctttgctt	gt					432

<210> 126
 <211> 112
 <212> DNA
 <213> Homo sapien

<400> 126
 acacaacttg aatagtaaaa tagaaactga gctgaatttt ctatkcact ttctaaccat 60
 agtaagaatg atatttccc ccagggatca ccaantattt ttaaaaattt gt 112

<210> 127
 <211> 54
 <212> DNA
 <213> Homo sapien

<400> 127
 accacgaaac cacaacaag atggaagcat caatccactt gccaaagcaca gcag 54

<210> 128
 <211> 323
 <212> DNA
 <213> Homo sapien

<400> 128
 acctcattag taattgtttt gttgtttcat ttttttctaa tgtctccctt ctaccagctc 60
 acctgagata acagaatgaa aatggaagga cagccagatt tctccttctg tctctgctca 120
 tttctcttga agtctaggtt acccattttg gggacccatt ataggcaata aacacagttc 180
 ccaaaagcatt tggacagttt cttgttctgt tttagaatgg ttttcctttt tcttagcctt 240
 ttcctgcata aggtcactc agtcccttgc ttgctcagtg gactgggctc cccagggcct 300
 aggtgcctt cttttccatg tcc 323

<210> 129
 <211> 192
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(192)
 <223> n = A,T,C or G

<400> 129
 acatacatgt gtgtatatct ttaaatatca cttttgtatc accttgactt tttagcatatc 60
 tgaaaacaca ctacataat ttntgtgac catgatcaga tacaacccaa atcattcatc 120
 tagccattt atctgtgata naagatagg tgagtttcat ttccttcaag ttggccaatg 180
 gataaacaaa gt 192

<210> 130
 <211> 362
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(362)
 <223> n = A,T,C or G

<400> 130
 ccttttttta tggaaatgagt agactgtatg ttgaaanatt tanccacaac ctctttgaca 60

```

tataatgacg caacaaaaag gtgctgttta gtccatgggt tcagtttatg cccctgacaa 120
gtttccattg tgttttgcgg atcttctggc taatcgctgg atcctccatg ttattagtaa 180
ttctgtatto cattttgtta acgcctggta gatgtaacct gctangaggg taaatttata 240
cttatttcaa agctcttatt ttgtggtcac taaaatggca atttatgtgc agcactttat 300
tgcagcagga agcgcgtgtg ggttggttgt aaagctcttt gctaattcta aaaagtaatg 362
gg

```

<210> 131

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (332)

<223> n = A,T,C or G

<400> 131

```

ctttttgaaa gatcgtgtcc actcctgtgg acatcttggc tcaatggagt tccccatgca 60
gtangactgg tatggttgca gctgtccaga taaaaacatt tgaagagctc caaaatgaga 120
gttctcccag gttcgcctcg ctgctccaag tctcagcagc agcctctttt aggaggcacc 180
ttctgaacta gatttaaggaa gcttgtaaat ctgatgtgat ttgggttatt atccaactaa 240
cttccatctg ttatcactgg agaaagccca gaactcccan gacnngtacc gattgtgggc 300
atanaaggat tgggtgaagc tggcgttgtg gt 332

```

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (322)

<223> n = A,T,C or G

<400> 132

```

acttttgcca ttttgtatat ataaacaatc ttgggacatt ctcttgaaaa ctagggtgtcc 60
agtggctaag agaactcgat ttcaagcaat tctgaaagga aaacacagcat gacacagaat 120
ctcaaatcc caaacagggg ctctgtggga aaatgagggg aggaaccttg tatctcgggt 180
tttagcaagt taaaatgaan atgacaggaa aggettatct ctcaacaaag agaagagttg 240
ggatgcttct aaaaaaaact ttggtagaga aaataggaat gctnaatcct aggggaagcct 300
gtaacaatct acaattggtc ca 322

```

<210> 133

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (278)

<223> n = A,T,C or G

<400> 133

```

acaagccttc acaagtttaa ctaaattggg attaatcttt ctgtanttat ctgcataatt 60
cttggttttc tttccatctg gctcctgggt tgacaatttg tggaaacaa totattgcta 120
ctatttcaaa aaatcacaa atctttccct ttaagctatg tttaattcaa actatccctg 180
ctattcctgt tttgtcaaa aaattatatt ttccaasata tgtntatttg cttagatgggt 240

```

ccccaggaaac actaatataa accacagaga ccagccctg 278

<210> 134
 <211> 121
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(121)
 <223> n = A,T,C or G

<400> 134
 gttttaaanaa cttgtttkagc tccatagagg aaagaatgtt aaactttgta tttttaaanaa 60
 tgattctctg aggttaaact tggttttcaa atgtttattt tacttgtatt ttgcttttgg 120
 t 121

<210> 135
 <211> 350
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(350)
 <223> n = A,T,C or G

<400> 135
 acttanaaac atgcttagca catcagaatc cctcaaagaa catcagtata atcctatacc 60
 atancaagtg gtgactgggt aagcgtgcga caaaggctcag ctggcacatt acttgtgtgc 120
 aaacttgata cttttgttct aagtaggaac tagtatacag tncctaggan tggtaactca 180
 gggtagccccc caactcctgc agccgctcct ctgtgccagn ccttgnaagg aactttcagc 240
 ccacctcaat caagccctgg gccatgctac ctgcaatttg ctgaacaaac gtttgcctgag 300
 tccccaggga tgcaagcct ggtgctcaac cctgggggcg tcaactcagt 350

<210> 136
 <211> 399
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(399)
 <223> n = A,T,C or G

<400> 136
 tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggccga ggccagggtt 60
 gctgtgattg tatcogaata ntccctgtga gaaaagataa tgagatgacg tgagcagcct 120
 gcagacttgt gtctgccttc aanaagccag acagggaagg cctgcctgcc ttggctctga 180
 cctggcggcc agccagccag ccacaggtgg gcttcttctc tttgtggtga caacnccaag 240
 aaaactgcag agggcccagg tcagggtgtna gtgggtangt gaccatataa carcaggtgc 300
 tcccaggaaac ccgggcaaaag gccatcccca cctacagcca gcattgccac tggcgtgatg 360
 ggtgcagang gatgaagcag ccagntgttc tgctgtgg 399

<210> 137
 <211> 165
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(165)
 <223> n = A,T,C or G

<400> 137
 actggtgttg tnggggggtga tgctgggtgtg anaagttgan gtgacttcan gatggtgtgt 60
 ggaggaaagtg tgtgaacgta gggatgtaga ngttttggcc gtgctaaatg agcttcggga 120
 ttggctgggtc ccactgggtg tcactgtcat tgggtggggtt cctgt 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(338)
 <223> n = A,T,C or G

<400> 138
 actcaactgga atgccacatt cacaacagaa tcagaggctt gtgaaaacat taatggctcc 60
 ttaactttctc cagtangaat cagggaacttg aaatggaaaac gttaacagcc acatgcccac 120
 tgetggggcag tctcccatgc ctccacacagt gaaagggctt gagaaaaaatc acatccaatg 180
 tcatgtgttt ccagccacac caaaagggtgc ttgggggtgga gggctggggg catananggt 240
 cangcctcag gaagcctcaa gtcccatcga gctttgccac tgtacattcc ccatttttaa 300
 aaaaactgat ggcctttttt ttttttttg taaaattc 338

<210> 139
 <211> 382
 <212> DNA
 <213> Homo sapien

<400> 139
 ggggaatcttg gttttttggca tctggtttgc ctatagccga ggcactcttg acagaacaaa 60
 gaaaggggaat toagtaaga aggtgattta cagccagcct agtgcccgaa gtgaaggaga 120
 attcaaacag acctcgatc tctgggtgtg agcctggctg gctcaccgcc tatcatctgc 180
 atttgcctta ctcaggtgt accggactct ggccctgat gtctgtagt tcacaggatg 240
 ccttatttgt cttctacacc ccacagggcc ccctactct tcggatgtgt ttttaataat 300
 gtcagctatg tgccccatcc tccttcatgc cctccctccc ttctctacca ctgctgagt 360
 gcctggaaat tgtttaagt gt 382

<210> 140
 <211> 200
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(200)
 <223> n = A,T,C or G

<400> 140
 accaaanctt cttctgttg tgttngattt tactataggg gtttngcttn ttccaaanct 60
 acttttctat taacancttt tgttaagtgt caggctgcac ttgtcccat anaattattg 120
 ttttcacatt tcaacttgta tgtgtttgtc tcttanagca ttggtgaaat cacatatttc 180
 atattcagca taaaggagaa 200

<210> 141
 <211> 335
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1) ... (335)
 <223> n = A,T,C or G

<400> 141
 acttttatttt caaacacac acatgtgtgca aaaaacacat agaaaaataa agtttggtgg 60
 ggggtgtgac taaacttcaa gtcacagact tttatgtgac agattggagc agggtttgtt 120
 atgcatgtag agaaccctaaa ctaatttcatt aacacaggata gaaacaggct gtctgggtga 180
 aatggttctg agaacctacc aattcaccctg tcagatgctg atenactagc tcttcagatg 240
 tttttctacc agttcagaga tnggttaatg actantttca atgggggaaaa agcaagatgg 300
 attcacaac caagtaattt caaacaaga cactc 335

<210> 142
 <211> 459
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1) ... (459)
 <223> n = A,T,C or G

<400> 142
 accagggttaa tattgccaca tatatccttt ccaattgcgg gctaaacaga cgtgtattta 60
 gggttgttta aagacaaccc agcttaatat caagagaaat tgtgacctt catggagtat 120
 ctgatggaga aacacactgag ttttgacaaa tottatattt ttcagatagc agtctgatca 180
 cacatgggtcc aacacacac aaataataaa taaaatacna tcagatgtta aagattggtc 240
 ttcaaacatc atagccaatg atgcccgcct tgcctataat ctctccgaca taaaaccaca 300
 tcaacacctc agtggccacc aaaccattca gcacagcttc cttaactgtg agctgtttga 360
 agctaccagt ctgagcacta ttgactatnt ttttcangct ctgaatagct ctagggatct 420
 cagcanggggt ggggaggaacc agctcaacct tggcgtant 459

<210> 143
 <211> 140
 <212> DNA
 <213> Homo sapien

<400> 143
 acatttccct ccaccaagtc aggaactctg gcttctgtgg gagttcttat caccctgggg 60
 aaatccaaaac agtctctctt agaaaggaat agtgtcacca accccaccca tctccctgag 120
 accatccgac ttcctctgtc 140

<210> 144
 <211> 164
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (164)
 <223> n = A,T,C or G

<400> 144
 acttcagtaa caacatacaa taacaacatt aagtgatat tggcatcttc gtcattttct 60
 atctatacca ctctcccttc tgaaaacaan aatcactanc caatcactta tacaattttg 120
 aggcaattaa tccatatttg ttttcaataa ggaaaaaaag atgt 164

<210> 145
 <211> 303
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(303)
 <223> n = A,T,C or G

<400> 145
 acgtagacca tccaactttg tatttgtaat ggcaaacatc cagnagcaat tccataaaca 60
 actggagggt atttataccc aattatocca ttcatataca tggcctcttc ctccaggcat 120
 gcaggacagg tatcataagt cggcccaggc atccagatac taacatttgt ataaacttca 180
 gtaggggagt ccattccaagt gacaggctca atcaaggag gaattggaac ataagcccag 240
 tagtaaaatn ttgcttagct gaaacagcca caaaagactt accgccgtgg tgattacat 300
 caa 303

<210> 146
 <211> 327
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(327)
 <223> n = A,T,C or G

<400> 146
 actgcagctc aattagaagt ggtctctgac tttcatcanc ttctccctgg gctccatgac 60
 actggcctgg agtgactcat tgcctctggt ggttgagaga gctcctttgc caacaggcct 120
 ccaagtcagg gctgggattt gtttctttc cacattctag caacaattatg ctgggcactt 180
 cctgaacagg gagggtggga ggagccagca tggacaagc tggcactttc taaagtagcc 240
 agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgcctgca ggatggaatg 300
 taggggtgag ctgtgtgact ctatggt 327

<210> 147
 <211> 173
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(173)
 <223> n = A,T,C or G

<400> 147
 acattgtttt tttagagata agcattgana gagctctcct taacgtgaca caatgggaagg 60
 actggascac ataccacat ctctgttctg agggataatt ttctgatasa gtcttgctgt 120
 atattoagc acatattgta tatattatto agttccatgt ttatagccta gtt 173

<210> 148

<211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> [1]... (477)
 <223> n = A,T,C or G

<400> 149
 acaaccaactt tatctcatcg aatttttaac ccaaactcac tcaactgtgc tttctatcct 60
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact 120
 gccctactac ctgctgcaat aatcacatto ccttctgtgc ctgacctga agccattggg 180
 gtggctcctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgctcac 240
 nccanccac ctacccgccc ccctctcttt acacagctac ctcttctgct tctaaccaca 300
 tagattatnt ccaatttcag tcaattaagt tactattaac actctaccog acatgtccag 360
 caccactggt aagccttctc cagccaacac acacacacac acacncacac acacacatat 420
 ccaggcacag gctacctcat ctccacaato accctcttaa ttaccatgct atggtgg 477

<210> 149
 <211> 207
 <212> DNA
 <213> Homo sapien

<400> 149
 acagttgtat tataatatac agaaataaac ttgcaatgag agcatttaag agggangaac 60
 taacgtattt tagagagcca aggaagggtt ctgtggggag tgggatgtaa ggtggggcct 120
 gatgateaat aagagtcagc caggttaagt ggtgggtgtg tatgggcaca gtgaagaaca 180
 tttcaggcag agggancagc agtgaaa 207

<210> 150
 <211> 111
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> [1]... (111)
 <223> n = A,T,C or G

<400> 150
 accttgattt cacttgctgt ctgatggaaa cccaactatc taatttagct aaaacatggg 60
 cacttaaatg tggtcagtgt ctggacttgt taactantgg catctttggg c 111

<210> 151
 <211> 196
 <212> DNA
 <213> Homo sapien

<400> 151
 agcgggcag gtcattatga acattccaga taccatcat tactcgatgc tgttgataac 60
 agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaacaccat 120
 ggataccaac cygaataccc ctatcccaga cagccactg tggcccccac tgtctacgag 180
 gtgcattcgg ctccagc 196

<210> 152
 <211> 132
 <212> DNA

<213> Homo sapien

<400> 152

```
acagcacttt cacatgtaag aaggagagaaa ttccataaatg taggagaaag ataacagaaac    60
cttcccccttt tcatctagtg gtggaaacct gatgctttat gttgacagga atagaaccag    120
gagggagttt gt                                     132
```

<210> 153

<211> 285

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{285}

<223> n = A,T,C or G

<400> 153

```
acaanaccca nganaggcca ctggccgtgg tgtcatggcc tccaaacatg aaagtgtcag    60
cttctgctct tatgtcctca tctgacaact ctttaccatt ttatcctcg ctacgacagga    120
gcacatcaat aaagtccaaa gtcttggact tggccttggc ttggagggaag tcatcaaac    180
cctggctagt gaggggtgog cycoctcct ggatgaoggc atctgtgaag togtgcacca    240
gtctgcaggg cctgtggaag cgcgtccac aoggagtnag gaatt                    285
```

<210> 154

<211> 333

<212> DNA

<213> Homo sapien

<400> 154

```
accacagtc tgttggggcca gggcttcctg accctttctg tgaasagcca tattatcacc    60
accocaaatt ttcccttaaa tatctttaac tgaaggggtc agcctcttga ctgcaaagac    120
cctaagcogg ttacacagct aactcccact ggccctgatt tgtgaaattg ctgctgctg    180
attggcacag gagtgcagg tgttcagctc cctcctcctg tggaaagaga ctctgatttg    240
agtttcacaa attctcgggc cacctcgtca ttgctcctct gaaatasaat ccggagaaatg    300
gtcaggcctg totcatccat atggatcttc ogg                                333
```

<210> 155

<211> 308

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{308}

<223> n = A,T,C or G

<400> 155

```
actggaaata ataaaaacca catcacagt ttgtgtcaaa gatcatcagg gcattggatgg    60
gaaagtgtct tgggaactgt aaagtgccta acacatgac gatgattttt gttataatat    120
ttgaatcacg gtgcatacaa actctcctgc ctgctcctcc tgggcccag cccagcccc    180
atcacagctc actgctctgt tcatccaggc ccagcatgta gtggctgatt cttcttggct    240
gcttttagcc tccanaagtt tctctgaagc caaccaaac tctangtgta aggcattgctg    300
gccctgggt                                     308
```

<210> 156

<211> 295

<212> DNA

<213> Homo sapien

<400> 156

acettgctcg	gtgcttggaa	catattagga	actcaaaata	tgagatgata	acagtgccta	60
ttattgatta	ctgagagAAC	tgtagacat	ttagttgaag	atcttctaca	caggaactga	120
gaataggaga	ttatgttttg	ccctcatatt	ctctctctac	ctccttgcct	cattctatgt	180
ctaataatatt	ctcaatcaaa	taagggttagc	ataatcagga	aatcgaccaa	ataccaatat	240
aaaaccagat	gtctatctct	aagattttca	aatagaaaaa	aaattaacag	actat	295

<210> 157

<211> 126

<212> DNA

<213> Homo sapien

<400> 157

acaagtctta	atagtgtgt	cactgtgcat	gtgctgaat	gtgaatcca	ccacattctt	60
gaagagcaaa	acaaattctg	tcattgtaac	tctatcttgg	gtcgtgggta	tatctgtccc	120
cttagt						126

<210> 158

<211> 442

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (442)

<223> n = A,T,C or G

<400> 158

acccactggg	cttggaaaca	cccattctta	atacagatgat	ttttctgtcg	tgtgaaaatg	60
aancragcag	gtgcccccta	gtcagtcctt	cattccagag	aaaaagagat	ttgagaaagt	120
gcctgggttaa	ttcaccatta	atttctctcc	ccaaactctc	tgagtcttcc	cttaatatct	180
ctgggtggttc	tgaccaaagc	aggtcatggg	ttgttgagca	tttgggatcc	cagtgaagta	240
natgtttgta	gccttgcata	cttagccctt	cccaagcaca	aacggagtg	caggtggtg	300
ccaacctgtt	ttctccagtc	carytagaca	gattcacagt	gcggaattct	ggaagctgga	360
nacagacggg	ctcttttgag	agccgggact	ctgagangga	catgagggcc	tctgcctctg	420
tgctcattct	ctgatgtcct	gt				442

<210> 159

<211> 498

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (498)

<223> n = A,T,C or G

<400> 159

acttccagggt	aacgtttgtg	tttccgttga	gcctgaactg	atgggtgacg	ttgtagggttc	60
tccaacaaga	actgagggtg	cagagcgggt	agggaagagt	gctgttccag	ttgcacctgg	120
gctgctgtgg	actgtttgtg	attcctcaat	acggcccaag	gttgtggaac	tgccanaaag	180
gtgtgtttgt	gganttgagc	tggggcggtc	gtggtaggtt	gtgggtctct	caacaggggc	240
tgctgtgttg	ccgggagtg	angtgttgt	gtcacttgag	cttggccagc	tctggaaagt	300
antanattct	ccctgaaggc	cagcgcttgt	ggagctggca	ngggctcank	ttgtgtgtaa	360
cgaaccagtg	ctgctgtggg	tgggtgtana	tcctccacaa	agcctgaagt	tatgggtgcn	420
tcaggtaana	atgtgttttc	agtgctccctg	ggcngctgtg	gaaggttgta	nattgtcacc	480

කඳුපුනතෘ ගුඡ්ගුඡ්ගුඡ්

498

<210> 160

<211> 300

<212> DNA

<213> Homo sapien

<220>

c221> micc_feature

 $\langle 222 \rangle \quad [1] \dots [360]$

<223> n = A, T, C or G

<400> 160

acctgcacac	agcttcactg	ccaaactcac	aaggagacat	caacctctag	acagggaaac	60
agcttcagga	tacttcagg	agacagagcc	accagcagca	aaacaaatat	tcccatgcct	120
ggagcatggc	atagaggaag	ctganaaatg	tggggctctg	ggaagccatt	tgagtctggc	180
cactagacat	ctcatcagcc	acttggtgtg	agagatgcgc	catgacccca	gatgcctctc	240
ccaccttac	ctcattctca	cacacttgag	ctttccactc	tgtataattc	caacatcctg	300
gagaaaaatg	gcagcttgac	cgaacctgtc	cacaacggtc	gaggctgatt	tctaacgaaa	360
cttgtagaat	gaagcctgga					380

«210» 161

<211> · 114

<212> DNA

<213> Homo sapien

<400> . 161

actccacatc	cctctgagc	aggcggttgt	cgttcaaggt	gtatttggcc	ttgcctgtca	60
cactgtccac	tggccctta	tccacttggg	gccttaatcc	tcgaaagagc	atgt	114

<210> 162

«211» 177

<212> DNA

<213> Homo sapien

<400> 162

```
actttctgaa tgaatcaaa tgatacttag tgtagtttta atatcctcat atatatacaa      60
gttttaactac tctgataatt ttgtaaacca ggttaaccaga acatccagtc atacagcttt      120
tgggtgatata taacttggca ataaccagct ctgggtgatac ataaactac tcaactgt      177
```

<210> 163

<211> 137

<212> DNA

c213> Homo sapien

<220>

<221> misc feature

<222> (1) ... (137)

<223> n - A, T, C or G

<400> 153

catttataca	gacaggcggtg	aagacatttca	cgacaaaaaac	gcgaattct	atcccggtgac	60
canagaagggc	agctaaggct	actcctacat	cctggcggtgg	gtggccttcg	cctgcaacctt	120
catcagcggc	atgatgt					137

<210> 164

<211> 469

<Z13> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(469)

<223> n = A,T,C or G

<400> 164

cttatcacaa	tgaatgttct	ccctgggcagg	gttgtgatct	ttgccacett	cgtgacttta	60
tgcattgcct	catgctattt	catacctaast	gagggagttc	caggagattc	aaccaggaaa	120
tgcattggatc	tcaaggaaa	caaacaccca	ataaactcgg	agtggcagac	tgacaactgt	180
gagacatgca	cttgcctacga	aacagaaatt	tcatgttgca	cccttgtttc	tacacctgtg	240
ggttatgaca	aagacaactg	ccaaagaatc	ttcaagaagg	aggactgcaa	gtatatcgtg	300
gtggagaaga	aggacccaaa	aaagacctgt	tctgtcagtg	aatggataat	ctaattgtgt	360
tctagttagc	acagggtctc	caggccaggc	ctcattctcc	tctggcctct	aatagtcact	420
gattgtgtag	ccatgcctat	cagtaaaaaa	atntttgagc	aaacacttc		469

<210> 165

<211> 195

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(195)

<223> n = A,T,C or G

<400> 165

acagtttttt	atanatctcg	acattgcggg	cacttctgtt	cagtttcata	aagctgggtg	60
atccgctgtc	atccactatt	ccttggttag	agtaaaaatt	attcttatag	cccatgtccc	120
tgcaggccgc	ccgcocgtag	ttctcgttcc	agtgtctctg	gcacacaggg	tgccaggact	180
tcctctgaga	tgagt					195

<210> 166

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(383)

<223> n = A,T,C or G

<400> 166

acatctttagt	agtgtggcac	atcagggggc	cctcaggggc	acagtcactc	atagcctcgc	60
cgagggtcgg	gtccacacca	ccgggtgtag	tgtgtctcaat	cttgggcttg	gcgccacact	120
ttggagaagg	gatatgctgc	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttgacagac	agcctgagca	aggggcggat	gttcagcttc	agctcctcct	tgcgcagggtg	240
gatgccaaac	tgcctcangg	tccgtgggaa	gctgggtgtc	acntcaccta	caacctgggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360
nggggccttt	ttggtgaact	ttc				383

<210> 167

<211> 247

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1) ... (247)
 <223> n = A,T,C or G

<400> 167
 acgagagccag accttggcca taaatgaanc agagattaag actaaacccc aagtcganat 60
 tggagcagaa actggagcaa gaagtgggcc tggggctgaa gtagagacca aggccactgc 120
 tatanccata cacagagcca actctcaggc caaggcnaag gtgggggcag anccagagac 180
 tcaatctgan tccaaagtgg tggctgggac actggtcag acanaggcag tgaactctgac 240
 tgaagtc 247

<210> 169
 <211> 273
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (273)
 <223> n = A,T,C or G

<400> 168
 acttctaaag tttctagaag tgggaaggatt gtanctatcc tgaatatggg tttaacttcaa 60
 aatccctcan ccttggtctt cactactgtc tatactgana gtgtcatgtt tccacaaagg 120
 gctgacacct gagcctgnat tttaactcat ccttgagaag ccttttcag taggggtgggc 180
 aattcccaac ttcttgcca caagcttccc aggtttctc ccttggaana ctccagcttg 240
 agtccacagat accttcctgg gctgcccctgg gca 273

<210> 169
 <211> 431
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (431)
 <223> n = A,T,C or G

<400> 169
 acagccttgg ctccccaaa ctccacagtc tcagtgcaga aagatcatct tccagcagtc 60
 agctcagacc aggggtcaag gatgtgcat caacagtttc tggtttcaga acaggttcta 120
 ctactgtcaa atgaccccc atacttctc aaaggctgtg gtaagttttg cacaggtgag 180
 ggcagcagaa aggggggtant tactgatgga caccatcttc tctgtatact ccacactgac 240
 ottgocatgg gcaaaaggccc ctaccacaaa aacaatagga tcaactgctgg gcaccagctc 300
 acgcacatca ctgacaaccg ggatggaaaa agaantgcca actttcatac atccaaactgg 360
 aaagtgatct gatactggat tcttaattac ctccaaaagg ttctgggggc catcagrtgc 420
 tgaacactg a 431

<210> 170
 <211> 266
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (266)
 <223> n = A,T,C or G

```

<400> 170
acctgtgggc tgggctgtta tgccgtgtcc ggctgtgaa agggagtcca gaggtggagc      60
tcaaggagct ctgcaggcat tttgccaanc ctctccanag canagggagc aacctacact      120
ccccgtaga aagacaccag attggagtc tgggaggggg agttgggggt ggcatttgat      180
gtatacttgt cactgaatg aangagccag agaggaanga gacgaanatg anattggcct      240
tcaaagctag ggtgtctggca ggtgga                                     265

```

<210> 171

<211> 1248

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1248)

<223> n = A,T,C or G

```

<400> 171
ggcagccaaa tcaataaacgg cagaggactgc agcccgcaact cgcagccctg gcaggcggca      60
ctggtcatgg aaaacgaatt gttctgtctg gggttcctgg tgcattccga gtgggtgctg      120
tcagccgcac actgtttcca gaagttagtg cagagctcct acaccatcgg gctgggacctg      180
cacagtcttg aggcggacca agagccaggg agccagatgg tggaggccag cctctccgta      240
cggcaccacag agtacaacag acccttgctc gctaaccgacc tcatgtctcat caagttggac      300
gaatccgtgt ccaggtctga caccatccgg agcatcagca ttgcttcgca gtgcccctacc      360
gccccgaaat cttgcctcgt tcttggctgg ggtctgtctg cgaacggcag aatgcctacc      420
gtgctgcagt gcytgaacgt gtccgtgggtg tctgaggagg tctgagtaa gctctatgac      480
ccgtgtgacc accccagcat gttctgcgcc ggccgagggc aagaccagaa ggactcctgc      540
aacggtgaat ctgggggggccc cctgatctgc aaogggtact tgcagggcct tgtgtcttcc      600
ggaaaaggccc cgtgtggcca agttggcgtg ccaggtgtct acaccaacct ctgcaaatte      660
actgagtggg tagagaaaac cgtccaggcc agttaactct ggggactggg aacctatgaa      720
attgaccccc aaatacatcc tgcggaaagg attcaggaat atctgttccc agccctcctc      780
ccctcaggcc caggagtcca ggcctccagc cctctctccc tcaaaccaag ggtaccgac      840
cccagccctc cctccctcag acccaggagt ccagaccccc cagccctcc tccctcagac      900
ccaggagtcc agccctcct cctccagacc caggagtcca gaccccccag cccctcctcc      960
ctcagaccca ggggtccagg cccccaaccc ctctccctc agactcagag gtccaagccc      1020
ccaacccctc attcccccaga cccagagggtc caggteccag cccctctctc ctcagaccca      1080
gcggtccaat gccacctaga ctntccctgt acacagtgcc ccttctgtgg acgttgaccc      1140
aaccttacca gttggttttt catttttngt ccttttcccc tagatccaga aataaagttt      1200
aagagaagng caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa      1248

```

<210> 172

<211> 159

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(159)

<223> Xaa = Any Amino Acid

```

<400> 172
Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro
1          5          10          15
Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser
20          25          30
Glu S r Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr
35          40          45
Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly

```

50	55	60
Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu		
65	70	75
Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe		80
	85	90
Cys Ala Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser		95
	100	105
Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe		110
	115	120
Gly Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn		125
	130	135
Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser		140
145	150	155

<210> 173
 <211> 1265
 <212> DNA
 <213> Homo sapien

<320>
 <221> misc_feature
 <222> (1)...(1265)
 <223> n = A,T,C or G

<400> 173

ggcagcccg	actcgagcc	ctggcaggcg	gcactgggtca	tggaaaaaga	attgtttctgc	60
tggggcgctcc	tgggtgcaccc	gcagtgggtg	ctgtcagccg	cacactgttt	ccagaactcc	120
tacaccatcg	ggctgggctt	gcacagtctt	gaggccgacc	aagagccagg	gagccagatg	180
gtggaggcca	gcctctccgt	acggcaccca	gagtacaaca	gacctttgt	cgctaaccgac	240
ctcatgctca	tcaagtttga	cgaatccgtg	tccaggtctg	acaccatccg	gagcatcagc	300
attgtcttgc	agtgccttac	cgccggggaac	tcttgctctg	tttctggctg	gggtctgctg	360
gcgaacgggtg	agtcacggg	tgtgtgtctg	ccctcttcaa	ggaggctctc	tgcccagtcg	420
cgggggctga	cccagagctc	tgcgtcccag	gcagaatgcc	taccgtgctg	cagtgcgtga	480
acgtgtcggt	gggtgtctgag	gaggtctgca	gtaagctcta	tgaccgctg	taccaaccca	540
gcattgttctg	cgccggcgga	gggcaagacc	agaaggactc	ctgcaacggg	gactctgggg	600
ggccrctgat	ctgcaacggg	tacttgccag	gccttctgtc	tttcggaaaa	gccccgtgtg	660
gccaaagtgg	ogtgccaggt	gtctacacca	acctctgcaa	attcaactgag	tggatagaga	720
aaacogtcca	ggccagttaa	ctctggggac	tgggaaccca	tgaatttga	ccccaaatac	780
atctgctgga	aggaattcag	gaatatctgt	tcccagcccc	tctccctca	ggcccaggag	840
tccaggcccc	cagccctcc	tccctcaaac	caagggtaca	gatccccagc	ccctcctccc	900
tcagacccag	gagtcacag	ccccagccc	ctcctccctc	agacccagga	gtccagcccc	960
tcctccntca	gacccaggag	tccagacccc	ccagccctc	ctcctccaga	cccaggggtt	1020
gaggccccc	acccctctc	cttcagagtc	agagggtcaa	gcccccaacc	ctcgttccc	1080
cagacccaga	ggttnnaggt	ccagccctc	tccntcaga	cccagnggtc	caatgccacc	1140
tagattttcc	ctgnacacag	tgcctcctt	tggngngttg	acccaacctt	accagttggt	1200
ttttcatttt	tngtcccttt	cccttagatc	cagaaataaa	gtttaagaga	ngngcaaaaa	1260
aaaaa						1265

<210> 174
 <211> 1459
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(1459)
 <223> n = A,T,C or G

<400> 174

ggtcagccgc	acactgtttc	cagaagttag	tgcagagctc	ctacaccatc	gggctgggce	60
tgcacagtct	tgaggccgac	caagagccag	ggagccagat	ggtggaggcc	agcctctccg	120
taaggcaacc	agagtacaac	agacccttgc	tcgctaacga	cctcatgctc	atcaagttgg	180
acgaatccgt	gtccgagtct	gacaccatcc	ggagcatcag	cattgcttcg	cagtgcoccta	240
ccgcggggaa	ctcttgccctc	gtttcttggt	ggggtctgct	ggcgaacggg	gagctcacgg	300
gtgtgtgtct	gcccctctca	aggaggtccct	ctgccccagtc	gcggggggctg	accragagct	360
ctgctgtccc	ggcagaatgc	ctaccgtgct	gcagtgcgtg	aacgtgtcgg	tgggtgtctga	420
ngagggtctgc	antaagctct	atgaccogct	gtaccacccc	ancatgttct	gcgcggggcg	480
agggcaagac	cagaaggact	cctgcaacgt	gagagagggg	aaaggggagg	gcaggcgact	540
cagggaaggg	tggaggagg	ggagacagag	acacacaggg	cggcatggcg	agatgcagag	600
atggagagag	acacagggag	acagtgcaca	ctagagagag	aaactgagag	aaacagagaa	660
ataaacacag	gaataaagag	aagcaaaagg	agagagaaac	agaaacagac	atggggagggc	720
agaaacacac	acacatagaa	atgcagttga	ccttccaaca	gcattggggcc	tgagggcggt	780
gacctccacc	caatagaaaa	tcctcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacc	ataacatzaa	tagtgcattt	atgcatacgt	900
cttatgcatc	catgatatac	ctttgttggg	attttttgat	atttctaagc	tacacagttc	960
gtctgtgaat	ttttttaaat	tgttgcaact	ctcctaaaaa	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtg	acttgtgcat	tcaaacagg	gttggtcaag	gttcaactgt	1080
gtacccagag	ggnaacagtg	acacagattc	atagaggtga	aacacgaaga	ggaacaggaa	1140
aatcaagac	tctacaaaga	ggctggggcag	gggtggctcat	gcctgtaatc	ccagcacttt	1200
gggagggcag	gcaggcagat	cacttgagg	aaggagtcca	agaccagcct	ggccaaaatg	1260
gtgaatccct	gtctgtacta	aaaatacaaa	agttagctgg	atatgggtgg	aggcgccctg	1320
aatcccagct	acttggggag	ctgaggcagg	agaattgctt	gaatatggga	ggcagagggt	1380
gaagtgaagt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (1167)

<223> n = A, T, C or G

<400> 175

ggcagagccct	ggcaggcggc	actgggtcatg	gaaaaogaat	tgttctgctc	gggcgtccctg	60
gtgcatccgc	agtgggtgct	gtcagccgca	cactgtttcc	agaactccta	cacctccggg	120
ctgggcctgc	acagtcttga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	180
ctctccgtac	ggcaccacga	gtacaacaga	ctcttgctcg	ctaaccacct	catgctcatc	240
aagttggacg	aatccgtgtc	caggtctgac	accatccgga	gcatacagcat	tgcttcgcag	300
tgccttaccg	gggggaactc	ttgcctcgtn	cttggtgggg	gtctgctggc	gaacggcaga	360
atgcctaccg	tgtgcaactg	cgtgaacgtg	tcgggtgggt	ctgaggangt	ctgcagttaag	420
ctctatgacc	cgctgtacca	ccccagcatg	ttctgcggcg	gcggagggga	agaccagaag	480
gactccctga	acggtgactc	tggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaaagcccc	gtgtggccaa	cttggtgctg	caggtgtcta	cacccaacctc	600
tgc aaattca	ctgagtggat	agagaaaaac	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgaccccca	aatacatcct	gcgggaangaa	ttcaggaata	tctgttccca	720
gcccctccct	cctcaggccc	aggagtccag	gccccagcc	cctcctccct	caaaaccaagg	780
gtacagatcc	ccagcccctc	ctccctcaga	cccaggagtc	cagaccccc	agcccctcnt	840
ccntcagaco	caggagtcca	gcccctccct	cntcagacgc	aggagtccag	acccccagc	900
ccntcntccg	tcagacccag	gggtgcaggc	ccccaaaccc	tentccntca	gagtcagagg	960
tc aaagccc	caacccctcg	ttccccagac	ccagagggtnc	aggtcccagc	ccctcctccc	1020
tcagacccag	cggtccaatg	ccacctagan	tntccctgta	cacagtgcce	ccttgtggca	1080
ngttgaccca	accttaccag	ttggtttttc	atcttttctg	cctttccccc	agatccagaa	1140
ataaagtnta	agagaagcgc	aaaaaaa				1167

<210> 176
 <211> 205
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(205)
 <223> Xaa = Any Amino Acid

<400> 176
 Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1 5 10 15
 Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20 25 30
 Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35 40 45
 Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
 50 55 60
 Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65 70 75 80
 Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85 90 95
 Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
 100 105 110
 Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
 115 120 125
 Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
 130 135 140
 Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
 145 150 155 160
 Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
 165 170 175
 Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
 180 185 190
 Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
 195 200 205

<210> 177
 <211> 1119
 <212> DNA
 <213> Homo sapien

<400> 177
 gggcactcgc agccctggca ggggcactg gtcattggaa acgaattgtt ctgctcgggc 60
 gtccctggtgc atccgcagtg ggtgctgtca gccgcacact gtttcagaa ctccctacacc 120
 atcgggctgg gctgcacag tcttgaggcc gcccaagagc caggggagcca gatgggtggag 180
 gccagcctct ccgtacggca cccagagtac aacagaccct tgctcgctaa cgacctcatg 240
 ctcatcaagt tggacgaatc cgtgtccgag tctgacacca tccggagcat cagcattgct 300
 tcgcagtgcc ctaccgoggg gaactcttgc ctogttctct gctggggctct gctggcgaa 360
 gatgctgtga ttgccatcca gtcccagact gtgggaggct gggagtgta gaagcttcc 420
 caacctggc aggttgtag catttcggca acttccagtg caaggacgtc ctgctgcac 480
 ctccctgggt gctcactact gctcactgca tcccccggaa cactgtgatc aactagccag 540
 cacc tagtt ctccgaagtc agactatcat gattactgtg ctgactgtgc tgtctattgt 600
 actaaccatg ccgatgttta ggtgaaatta gcgtcacttg goctcaacca tottggtatc 660
 cagttatcct cactgaattg agatttcctg ctccagtggt agccattccc acataatttc 720
 tgacctacag aggtgaggga tcatatagct ctccaaggat gctggtaetc ccttcacaaa 780

```

ttcattttctc ctgtttgtagt gaaaggtgcg cccctctggag cctcccaggg tgggtgtgca      840
ggtcaccaatg atgaatgtat gatcgtgttc ccattaccca aagcctttta atccctcctg      900
ctcagtaaac cagggcaggt ctagcatttc ttcatttagt gtatgctgtc cttcatgca      960
accacctcag gactcctgga tctctcgct agttgagctc ctgcattgtg cctccttggg     1020
gaggtgaggg agagggtcca tggttcaatg ggaatctgtg agttgttaaa cattaggtgc     1080
ttaataaaca gaagctgtga tgttaaaaaa aaaaaaaaaa     1119

```

<210> 178

<211> 164

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(164)

<223> Xaa = Any Amino Acid

<400> 178

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1          5          10          15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
          20          25          30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
          35          40          45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
          50          55          60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
          65          70          75          80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
          85          90          95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
          100          105          110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
          115          120          125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
          130          135          140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
          145          150          155          160
Pro Gly Thr Leu

```

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

```

ctggagtgc ttgggtgttc aagccctctg aggaagcaga atgcaccttc tgaggcacct      60
ccagtgcgcc caggcggggg gatgcgaggg tcggagcacc ctgcccgggc tgtgattgct     120
gccaggcaat gttcatctca gctttttctgt ccttttgctc coggcaagcg cttctgtgta     180
aagttcatac ctggagcctg atgtottaac gaataaaggt cccatgctcc accogaaaaa     240
aaaaaaaaaa

```

<210> 180

<211> 202

<212> DNA

<213> Homo sapien

<400> 180

actagtccag	tgtaggtggaa	ttccattgtg	ttggggcccaa	cacaatgggt	acctttaaca	60
tcacccagac	cccgccctg	ccogtgccc	acgctgctgc	taacgacagt	atgatgetta	120
ctctgctact	cggaaactat	ttttatgtaa	ctaagtatg	ctttcttgtt	tataaatgcc	180
tgatttaaaa	aaaaaaaaaa	aa				202

<210> 181

<211> 558

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{558}

<223> n = A,T,C or G

<400> 181

tcyytttght	naggtttkk	agacamceck	agacctwaan	ctgtgtcaca	gacttcyngg	60
aatgtttagg	cagtgcctagt	aatttcyctog	taatgattct	gttatttactt	tcctnattct	120
ttattctctt	ttctctctgaa	gattaatgaa	gttgaaaaat	gaggtggata	aatacaaaaa	180
ggtagtgtga	tagtataagt	atctaagtgc	agatgaaagt	gtgttatata	tatccattca	240
aaattatgca	agttagtaat	tactcaggg	taactaaatt	actttaatat	gctgttgaac	300
ctactctgtt	ccttggtctag	aaaaaattat	aacacaggact	ttgttagtct	gggaagccaa	360
attgataata	ttctatgttc	taaaagtgtg	gctatacata	aattattaag	aaatatggaw	420
ttttattccc	aggaatatgg	kgttcatttt	atgaatatta	csorggatag	awgtwtgagt	480
aaaaycagtt	ttggtwaata	ygtwaatatg	tcmataataa	acaakgcttt	gacttatttc	540
caaaaaaaaa	aaaaaaaa					558

<210> 182

<211> 479

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{479}

<223> n = A,T,C or G

<400> 182

acagggwttk	grggatgcta	agccccrga	rwtygtttga	tccaacctg	gcttwttttc	60
agaggggaa	atggggccta	gaagttacag	mscatytagy	tggtgcgmg	gcacccctgg	120
ctcacacag	actcccgagt	agctgggact	acagggcacac	agtcactgaa	gcagggccctg	180
ttwgcaattc	acgttgccac	ctccaaactta	aacattcttc	atatgtgatg	tccttagtca	240
ctaaggctaa	actttccac	ccagaaaagg	caacttagat	aaaatcttag	agtactttca	300
tactmttcta	agtctctctc	cagctcact	kkagagtcctm	cytggggggt	gataggaant	360
ntctcttggc	tttctcaata	aartctctat	ycatctcatg	tttaatttgg	tacgcataaa	420
awtgstgara	aaattaaaaa	gtctctggtty	maactttaaaa	araaaaaaa	aaaaaaaaa	479

<210> 183

<211> 384

<212> DNA

<213> Homo sapien

<400> 183

aggggggagc	agaagctaaa	gccaaagccc	aagaagagtg	gcagtgccag	cactgggtgcc	60
agtaccagta	ccaataacag	tgccagtgc	agtgccagca	ccagtgggtg	cttcagtgc	120
gggtccagcc	tgacogccac	tctcacattt	gggtctcttc	ctggccttgg	tggagctgg	180
gccagcacca	gtggcagctc	tgggtgctgt	ggtttctct	acaagtgaga	ttttagatat	240

tgtaaatcct gccagtcctt ctcttcaagg cagggtgcat cctcagaaac ctactcaaca	300
cagcactcta ggcagccact atcaatcaat tgaagttgac actctgcatt aractaktt	360
gccatttcaa aaaaaaaaaa aaaa	384

<210> 184

<211> 496

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(496)

<223> n = A,T,C or G

<400> 184

accgaattgg gaccgctggc ttataagcga tcatgttynt ccrgtatcac ctcaacggagc	60
agggagatcg agtctatacg ctgaagaaat ttgacccgat gggacaacag acctgctrag	120
cccatcctgc togtttctcc ccagatgaca aatactctcg acacogaatc acctcaaga	180
aacgcttcaa ggtgctcatg aocagcaac cgcgcctgt cctctgaggg tcccttaaac	240
tgatgtcttt tctgccacct gttacccctc ggagactcgg taaccaaact cttcggactg	300
tgagccctga tgcctttttg ccagccatcc tctttggcat ccagtctctc gtggcgattg	360
attatgcttg tgtgaggcaa tcatggtggc atcaccata aagggaacac atttgacttt	420
ctttctctcat attttaaat actacmagaw tattwmagaw waatgawtt gaaaaactst	480
tnaaaaaaaa aaaaaa	496

<210> 185

<211> 384

<212> DNA

<213> Homo sapien

<400> 185

gctggtagcc tatggcgkgy cccacggagg ggcctcctgag gccacggrac agtgacttcc	60
caagtatcyt ggcgcgcgtc ttctaccgtc cctaccctgca gatcttcggg cagattcccc	120
aggaggacat ggaactggcc ctcatggagc ccagcaactg ytcgtcggag cccggcttct	180
gggcacaccc tccctggggc caggcgggca cctgcgtctc ccagtatgcc aactggtcgg	240
tggtgctgct cctcgtcctc ttctgctcgt tggccaacat cctgctggtc aactgctcga	300
ttgccatggt cagttacaca ttggcaaaag tacaggggca cagcgatctc tactgggaag	360
ggcgcgcgtt accgctccat ccgg	384

<210> 186

<211> 577

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(577)

<223> n = A,T,C or G

<400> 186

gagttagctc ctccacaacc ttgatgaggt ogtctgcagt ggctctctgc ttcataccgc	60
tnccatogtc atactgtagg ttgcccacca cytccctggca tcttggggcg gcntaatatt	120
ccaggaaact ctcaatcaag tcaccgtoga tgaacctgt gggctggctc tgtcttcgc	180
tcgggtgtaa aggatctccc agaaggagt ctcgatcttc cccacacttt tgatgacttt	240
attgagtcga ttctgcattt ccagcaggag gttgtaccag ctctctgaca gtgaggtrac	300
cagccctatc atgccgttga moigtccgaa garcaccgag ccttgtgtgg gggkkgaagt	360
ctcaccocaga ttctgcatta ccagagagcc gtggcaaaaag acattgacaa actcgcccag	420
gtggaaaaag amcamctcct ggargtgetn gcccctctc gtcmgttggg ggcagcgcw	480

```

tcctttttgac acacaaacaa gttaaaggca ttttcagccc ccagaaantt gtcatcatec 540
aagatntege acagcactna tccagttggg attaaat 577

```

```

<210> 187
<211> 534
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(534)
<223> n = A,T,C or G

```

```

<400> 187
aacctcttcc tgtataatgc tgtgtaatat cgtcccgatn ttgtctggtg agaatycatw 60
actkggaaaa gmaacattaa agcctcggaca ctggtattaa aattcacaat atgcaacact 120
ttaaacagtg tgtcaatctg ctcccyynac ttgtcatca ccagttctggg aakaagggtta 180
tgccctatct acacctgtta aaagggcgct aagcattttt gattcaacat cttttttttt 240
gacacaagtc cgaaaaaagc aaaagttaac agttatyaat ttgttagcca attcactttc 300
ttcatgggac agagccatyt gatttcaaaa gcaaatcgca taatattgag ctttygggagc 360
tgatatttga gcggaagagt agcctttcta cttcaccaga cacaactccc ttcatattg 420
ggatgttnac naaagtwtatg tctctwacag atgggatgct tttgtggcaa ttctgttctg 480
aggctctccc agtttattta ccacttgcac aagaaggcgt tttcttcttc aggc 534

```

```

<210> 188
<211> 761
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(761)
<223> n = A,T,C or G

```

```

<400> 188
agaaaccagt atctctnaaa acaacctctc ataccttgtg gacctaatlt tgbtgcgtg 60
tgbtgcgtgc cgcataattat atagacagge acatcttttt tactttctga aaagcttatg 120
cctcttttgt atctatatct gtgaaagtgt taatgatctg ccataatgtc ttggggacct 180
ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa totagttngt 240
tttattogac atgagggaaa ttccagatn acaacactna caaactctcc ctkgackarg 300
ggggacaaaag aaaagcaaaa ctgacataaa raacacatwa cctgggtgaga arttgcataa 360
acagaaatwr ggtagtatat tgaarnacag catcattbaa rmgttwtktt wttctccctt 420
gcaaaaaaca tgtacngaact tcccgctgag taatgccaaag ttgttttttt tatnataaaa 480
cttgcccttc attacatggt tnaaagtggg gtggtgggccc aaaatattga aatgatggaa 540
ctgactgata aagctgtaca aataagccgt gtgcctcaac agcaacacag taatgttgac 600
atgcttaatt cacaatgctt aatttcatta taaatgtttg ctaaaataca ctttgaacta 660
ttttttctgt tttccagagc tgagatntta gattttatgt agtatnaagt gaaaaantac 720
gaaaataata acattgaaga aaaaananraa aaanaaaaaa a 761

```

```

<210> 189
<211> 482
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(482)
<223> n = A,T,C or G

```

```

<400> 189
tttttttttt ttgtgcgatn ctactatttt attgcaggan gtgggggtgt atgcaccgca      60
caccgggggt atnagaagca agaaggaagg agggaggggca cagcccttgg ctgagcaaca      120
aagcgccttg ctgccttctc tgtctgtctc ctggtgcagg cacatgggga gaccttcccc      180
aaggcagggg ccaccagtcg aggggtggga atacaggggg tgggagtgtg gcataagaag      240
tgataggcac aggccaccog gtacagaccc ctcggtcctt gacaggtnga ttctgaccag      300
gtcattgtgc cctgcccagg cacagcgta n atctggaaa gacagaaagc ttctcttttc      360
aaatttggct ngtcattgaa ngggcatttt tcccaattng gctnggtctt ggtaactttg      420
gttcgggcca gctccnctg caaaaantat tcacccnnet ccnaattgct tgcnggnccc      480
cc

```

<210> 190

<211> 471

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(471)

<223> n = A,T,C or G

```

<400> 190
tttttttttt ttttaaaaca gtttttcaca acaaaattta ttagaagaat agtgggttttg      60
aaaactctcg catccagtga gaactaccat acaccacatt acagctngga atgtnctcca      120
aatgtctggt caaatgatac aatggaaaca ttcaatctta cacatgcacg aaagaacaag      180
cgcttttgac atacaatgca caaaaaaaaa aggggggggg gaccacatgg attaaaattt      240
taagtactca tcacatacat taagacacag ttctagtcca gtcaaaaatc agaactgcnt      300
tgaaaaaatt catgtatgca atccaaacca agaacttnat tggatgatcat gantnctcta      360
ctacatcnac cttgatcatt gccaggaacn aaaagttnaa ancaacnctg acaaaaaana      420
tctgtaattt anttcaacct ccgtacngaa aaatnttmtt tatacactcc c              471

```

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(402)

<223> n = A,T,C or G

```

<400> 191
gagggataga aggtctgttc taatgtcggm ctgttcagcc accaactcta acaagttgct      60
gtcttccact cactgtctgt aagcttttta acccagacwg tatcttcata aatagaacaa      120
attcttcacc agtcacatct tctaggacct ttttggatcc agttagtata agctcttcca      180
cttcttttgt taagaattca tctggtaaag tcttaagttt tgtagaaagg aattyaattg      240
ctogttctct aacaatgtcc tctccttgaa gtatttgggt gaacaaccca cctaaagtcc      300
cttctgtgat ccatttttaa tatacttaat agggcattgk tncactaggt taaattctgc      360
aagagtcatc tgtctgcaa agttgcgtta gtatatctgc ca              402

```

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (601)

<223> n = A,T,C or G

<400> 192

gagctcgggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catggnaact	60
ggctctacccc	acatgggagc	agcatgccgt	agntatataa	ggctattccc	tgagtcagac	120
atgcytyttt	gaytacccgt	tgccaagtgc	tggtgattct	yaacacccyt	ccatcccgyt	180
ctttctgtga	aaaactggca	cttkctctga	actagcarga	catcacttac	aaattcaccc	240
acgagacact	tgaaagggtg	aacaaagcga	ytcttgcat	gctttttgtc	cctccggcac	300
cagttgtcaa	tactaacccg	ctggctttgc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	ctttttgttt	caaaagcacc	tcttggtgcc	420
tggtggatca	ggttcccatt	tcccagtcyg	aatgttcaca	tggcatattt	wacttcccac	480
aaaacattgc	gatttgaggc	tcagcaacag	caaatcctgt	tccggcattg	gctgcaagag	540
cctcgatgta	gcgggcacag	gcraaggcag	gcgcctgtgag	ccccaccagc	agcagaagca	600
g						601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (608)

<223> n = A,T,C or G

<400> 193

atacagccca	nateccacca	ogaagatgcg	cttgttgact	gagaacctga	tgccgtcaact	60
ggctcccgtg	tageccccagc	gactctccac	ctgctggag	cggttgatgc	tgcaactoytt	120
cccaacgcag	gcagmagcgg	gcccgggtcaa	tgaactccay	tcbtggcctg	gggtkgaagg	180
tkaagtgcag	gaagaggctg	accacctcgc	ggctccaccag	gatgcccag	tgtgcccggac	240
ctgcagcgaa	actcctcgat	ggcatgagc	gggaagcgaa	tgaggcccag	ggccttgccc	300
agaaaccttc	gcctgtttct	tgscgtccac	tgcagctgct	gccgctgava	ctoggcoctcg	360
gaccagoggg	caaaogggct	tgaacagccg	caacctcaagg	atgcccagtg	tgtcgogctc	420
caggammgsc	accagcgtgt	ccaggtccat	gtcgggtgaag	ccctccggcg	gtrattggcgt	480
ctgcagtggt	tttgtcgatg	ttctccaggc	acaggctggc	cagctgcggg	tcacggaaga	540
gtcgcgcctg	cgtgagcgagc	atgaaggcgt	tgtcggctcg	cagttctttct	tcaggaaactc	600
cacgcaat						608

<210> 194

<211> 392

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (392)

<223> n = A,T,C or G

<400> 194

gaacgggtcg	accttgccctc	gcattgtgct	tgctggcagg	gaataccttg	gcaagcagyt	60
ccagtcaggag	cagccccaga	ccgctgcgcg	ccgaagctaa	gcctgcctct	ggccttcccc	120
tccgcctcaa	tgcagaacca	gtagtgggag	cactgtgttt	agagttaaga	gtgaacactg	180
tttgatttta	cttggggaatt	tcctctgtta	tatagctttt	cccaatgcta	atttccaaac	240
aacaacaaca	aaataacatg	cttgcctgtt	aagttgtata	aaagttagtg	attctgtatt	300
taaagaaaat	attactgtta	catatactgc	ctgcaatttc	tgtattttatt	gkinctatgg	360
aaataaatat	agttattaaa	ggttgtcant	cc			392

<210> 195
 <211> 502
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (502)
 <223> n = A,T,C or G

<400> 195
 ccattkaggg ggtkagggkyc cagtttyccga gtggaagaaa caggccagga gaagtgcgtg 60
 ccgagctgag gcagatgttc ccacagtgac cccagagcc stggggtata gtytctgacc 120
 cctcncaagg aaagaccaca ttctggggac atgggctgga gggcaggacc tagaggcacc 180
 aaggggaaggc cccattccgg ggtgtgtccc cggggaggaa ggggaaggggc tctgtgtgce 240
 ccccaegagg aagaggccct ggtcctggg atcagacac ccttcacgtg tatccccaca 300
 caaatgcaag ctacccaagg tccccctctca gtcccccttc atacaccctg amcggcact 360
 gscscacacc cccccagagc acgcccaccg ccattggggar tgtgtctcaag gartogcngg 420
 gcarcgtgga catctngtcc cagaaggggg cagaatctcc aatcgangga ctgarcmstt 480
 gctnanaaaa aaaaaaaaaa aa 502

<210> 196
 <211> 665
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (665)
 <223> n = A,T,C or G

<400> 196
 ggttacttgg ttctattgac accacttagt ggatgtcatt tagaaccatt ttgtctgctc 60
 cctctggaag ccttgccgag agcggacttt gtaattgttg gagaataact gctgaatttt 120
 wagtgtttk ggttgattc gcaccactgc acccacaact tcaatatgaa aacyawttga 180
 actwatttat tatcttgtga aaagtataac aatgaaaatt ttgttctac tgtatctkac 240
 aegtatgatg aaaagcaawa gatatacat cttttattat gttaaatkat gattgccatt 300
 attaatcggc aaaatgtgga gtgtatgttc ttttcacagt aatatatgcc ttttgtaact 360
 tcaattggtt attttattgt aaatgarta caaaattctt aatttaagar aatgggtatg 420
 watatttatt tcattaattt ctctcctkgt ttaogtwant ttgaaaaga wtgcabgatt 480
 tcttgacaga aatcgatctt gatgtgtggt aagtagcttg aaccacatcc ctatgagttt 540
 ttcttagaat gtataaagggt tgtagcccat cnsacttcaa agaaaaaat gaccacatac 600
 ttgcaatca ggttgaaatg tggcatgctn ttctaattcc aactttataa actagcaaan 665
 aagtg

<210> 197
 <211> 492
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (492)
 <223> n = A,T,C or G

<400> 197
 ttttnttttt ttttttttgc aggaaggatt ccatttattg tggatgcatt ttcacaatat 60
 atgtttkatt gagcgatcca ttatcagtga aaagtatcaa gtgtttataa nttttttagg 120

```

aaggcagatt cacagaacat gctngtcngc ttgcagtttt acctegtana gatnacagag      180
aattatagtc naaccagtaa acnaggaatt tacttttcaa aagattcaat ccaaaactgaa      240
caaaaltcta ccoctgaaact tactccatcc aaatatggga ataanagtca gcagtgatac      300
attctcttct gaacttttaga tttcttagaa aaatatgtaa tagtgatcag gaagagctct      360
tgttcaaaaag tacaacnaag caatgttccc ttaccatagg ccttaattca aactttgatc      420
catttcaact ccatcacggg agtcaatgct acctgggaca cttgtatctt gttcatnctg      480
ancntggctt aa                                         492

```

```

<210> 198
<211> 478
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(478)
<223> n = A,T,C or G

```

```

<400> 198
tttnttttgn atttcantct gtannaanta ttttcattat gtttattana aaaatatnaa      60
tgtntccacn acaaatcatn ttacntnagt aagaggccan ctacattgta caacntacac      120
tgagtatatt ttgaaaagga caagttttaa gtanacncat attgcccagc atancaaat      180
tatacatggc ttgattgata tttagcacag canaaactga gtgagttacc agaaanaaat      240
natatagtgc aatcngattt aagatacaaa acagatccta tggtagatan catcntgtag      300
gagttgtggc tttatgttta ctgaaagtca atgcaagtcc tgtacaaaga gatggccta      360
agcattctag tacctctact ccatggttaa gaatcgtaca cttatgttta catatgttca      420
gggtaagaat tgtgttaagt naanttatgg agaggtccan gagaaaaatt tgatncaa      478

```

```

<210> 199
<211> 482
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(482)
<223> n = A,T,C or G

```

```

<400> 199
agtgaattgt cctccaacaa aacctcttga tcaagtttgt ggcaactgaca atcagaacct      60
tgctagttcc tgtcatctat tcgtacttaa atgcagactg gagggggacca aaaaggggca      120
tcaactccag ctggattatt ttggagcctg caaatctatt cctaattgta cggactttga      180
agtgattcag tttcctctac ggatgagaga ctggctcaag aatatcctca tgcagcttta      240
tgaagccnac tctgaacacg ctggttatct nagctgagaa ncagagaaat aaagtcnaga      300
aaatttacct ggangaaaag aggtcttngg ctggggacca tcccatgtga ctttctctta      360
anggacttta agaanaaaact accacatgtt tgtngtatcc tgggtgcngg ccgtttantg      420
aacntngacn ncaccttntt ggaatanant cttgacngcn tctgaacct gctcctctgc      480
ga                                         482

```

```

<210> 200
<211> 270
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(270)
<223> n = A,T,C or G

```

```

<400> 200
cgscgcgaag tgcaactcca gctggggcgcg tgcggacgaa gattctgcca gcagttcggtc      60
cgactgcgac gacggcgggcg ggcacagtgcg caggtgcagc gggggcgccct ggggtcttgc      120
aaggctgagc tgacgcgcga gaggtogtgt caggtcccac gaccttgacg ccgtcgggga      180
cagcgcggaac agagcccggt gaangcggga ggcctcgggg agccctcggg gaaggcgggc      240
cagagagata cgcaggtgca ggtggccgac                                     270

```

```

<210> 201
<211> 419
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (419)
<223> n = A,T,C or G

```

```

<400> 201
tttttttttt ttttggaaac tactgcgagc acagcaggtc agcaacaagt ttatttttga      60
gctagcaagg taacagggta gggcatgggt acatgttcag gtcaacttcc ttgtctgttg      120
ttgattgggt tgtctttatg gggcgggggt ggggtagggg aaanogaagc anaantaaca      180
tggagtgggt gcacctccc tgtagaacct ggttacnaaa gcttggggca gttcacctgg      240
tctgtgacgg tcatttttctt gacatcaatg ttattagaag tcaggatata ttttagagag      300
tccactgtnt ctggagggag attaggggtt ottgccana tccaancaaa atccacntga      360
aaaagtggga tgatncangt acngaatacc ganggcatan ttctcatant oggtggcca      419

```

```

<210> 202
<211> 509
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (509)
<223> n = A,T,C or G

```

```

<400> 202
tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt      60
tggcacttaa tccattttta ttccaagtgc tctacaaant ttnaatnenc cattatacng      120
gttatttttc aaaactctaa nnttaattca atnfnagcca aantccttac ncaaatnnaa      180
tactncaaaa aatcaaaaat atactntctt ttacgcaaac ttngttacat aaattcaaaa      240
aatatatacg gctgggtgtt tcaaggtaca attatcttaa cartgcaaac atntctnnaa      300
ggaactabaa taataaaaaa cactnccgra aagggttaag ggaacaacaa attcntttta      360
caacancnnc nattataaaa atcatatctc aaatcttagg ggaatatata ctccacacng      420
ggaatctaac ttttactnca ctbtgtttat ttttttanaa ccattgtntt gggcccaaca      480
caatggnaat nccnccnenc tggactagt                                     509

```

```

<210> 203
<211> 583
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (583)
<223> n = A,T,C or G

```

<400> 203

tttttttttt	tttttttctga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	tattttataa	ctggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataatto	ttaggaatta	gcttaaaaac	tgcctaaagt	180
gaaatcttct	tctagctctt	ttgaactgtaa	atcttttgact	cttgtaaaaac	atccaaattc	240
atttttcttg	tctttaaaat	tatctaactt	ttccattttt	tcctatttcc	aagtcaattt	300
gcttctctag	cttcatttcc	tagctcttat	ctactattag	taagtggctt	tttctctaaa	360
agggaaaaaca	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tatttctacc	420
tacgttaata	aaatagcatt	ttgtgaagcc	agctcaaaag	aaggcttaga	tccttttatg	480
tccatttttag	tcactaaaag	atatcnaaag	tgcacagaatg	caaaaggctt	gtgaacattt	540
attcaaaagc	taataataaga	tatttcscat	actcatcttt	ctg		583

<210> 204

<211> 589

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (589)

<223> n = A,T,C or G

<400> 204

ttttttttnt	tttttttttt	tttttttctc	ttcttttttt	ttganaatga	ggatcgagtt	60
tttcaactctc	tagatagggc	atgaagaaaa	ctcatcttcc	cagcttttaa	ataacaaatca	120
aactctcttat	gctatatcat	attttaagtt	aaactaatga	gtcaactggct	tatcttctctc	180
tgaaggaaat	ctgttcaatc	ttctcattca	tatagttata	tcaagtacta	ccttgcatat	240
tgagagggtt	ttcttctcta	tttacacata	tatttccatg	tgaatttgta	tcaaaccttt	300
attttcatgc	aaactagana	ataatgtntt	cttttgcata	agagaagaga	acaatatnag	360
cattacaaaa	ctgctcaaat	tgtttgthaa	gnttatccat	tataatttag	tnggcaggag	420
ctaatacaaa	tcacattttac	ngacnagcaa	taataaaaact	gaagtaaccag	ttaaatatcc	480
aaaataatta	aaggaaacatt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ctattnagaa	tgaattcaca	tgttattatt	ccttagccca	acacaaatgg		589

<210> 205

<211> 545

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (545)

<223> n = A,T,C or G

<400> 205

ttttnttttt	ttttttcagtt	aataatcaga	acaatattha	tttttatatt	taaaattcat	60
agaaaagtgc	cttacattta	ataaaagttt	gtttctcaaa	gtgatcagag	gaattagata	120
tngtcttgaa	caccaatatt	aatttcgagga	aaatacacca	aaatacatta	agtaaaattat	180
ttaagatcat	agagcttgta	agtgaaaaaga	taaaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaaactacta	tggacttctt	gctttaattt	tgtgatgaat	300
atgggggtgc	actggtaaac	caacacatctc	tgaaggatac	attacttagt	gatagattct	360
tatgtacttt	gctanattnac	gtggatatga	gttgacaagt	ttctctttct	tcaatctttt	420
aaggggcnga	ngaattgagg	aagaaagaaa	aaggattacg	catactgttc	tttctatnng	480
aaggattaga	tatgttttct	ttgccaatat	taaaaaaata	ataatgttta	ctaccagtga	540
aaacc						585

<210> 206

<211> 487

<212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(487)
 <223> n = A,T,C or G

<400> 206
 tttttttttt ttttttagtc aagtttctna tttttattat aattaaagtc ttggtcattt 60
 catttatttag ctctgcaact tacatattta aattaaagaa acgttnttag acaaactgtta 120
 caatttataa atgtaagggtg ccattattga gtanatatat tctccaaga gtggatgtgt 180
 cctttctccc accaactaat gaancagcaa cattagtta attttattag tagatnatac 240
 actgctgcaa acgctaattc tcttctccat ccccatgtng atattgtgtt catgtgtgag 300
 ttggttagaa tgcattcaca atctnaccat caacagcaag atgaagctag gcntgggctt 360
 tcggtgaaaa tagactgtgt ctgtctgaat caaatgatct gacctatcct cgggtggcaag 420
 aactcttcca accgcttctt caaaggcngc tgccacattt gtggctctcn ttgcaactgt 480
 ttcaaaa 487

<210> 207
 <211> 332
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 207
 tgaattggct aaaagactgc atttttanaa cttagcaactc ttatttcttt cctttaaaaa 60
 tacatagcat taatcccaa atcctattta aagacctgac agcttgagaa ggtcactact 120
 gcatccatag gacctctctg tgggtctggt gttacntttg aantctgaca atccttgana 180
 atctttgcat gcagaggagg taaaagggtat tggattttca cagaggaana acacagcgca 240
 gaaatgaagg ggccaggctt actgagcttg tccactggag ggtcctatgg tgggacatgg 300
 aaaagaaggc agcctaggcc ctggggagcc ca 332

<210> 208
 <211> 524
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(524)
 <223> n = A,T,C or G

<400> 208
 agggcgtggt gcggaggggc ttactgtttt gtctcagtaa caataaatat aaaaagactg 60
 gttgtgttcc ggccccatcc aaccacgaag ttgattcttc ttgtgtgcag agtgactgat 120
 tttaaggac atggagcttg tcccaatgtc acaatgtcac agtgtgaagg gcacactcac 180
 tcccggtgta ttccacattta gcaacacaca atagctcatg agtccatact tgtaaatact 240
 ttgggcagaa tacttnttga aacttgca gaataactaa gatccaagat atttcccaaa 300
 gtaaatagaa gtgggtcata atattaatta cctgttcaca tcagcttcca tttaaaagtc 360
 atgagcccag aactgacat caaactaagc coacttagac tctcaccac cagtctgtcc 420
 tgtcatcaga caggaggctg tcaccttgac caaattctca ccagtcacac atctatccaa 480
 adaccattac ctgatacact tccggtaatg cccaccttg gtga 524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209
 ggggtgaggaa atccagagtt gccatggaga aaattccagt gtcagcattc ttgctccttg 60
 tggccctctc ctacactctg gccagagata ccacagtcaa acctggagcc aaaaaggaca 120
 caaaggactc togacccaaa ctgccccaga cctctctca 159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(256)
 <223> n = A,T,C or G

<400> 210
 actccctggc agacaaaggc agaggagaga gctctgttag ttctgtgttg ttgaactgcc 60
 actgaatttc ttcccaacttg gactattaca tggcanttga gggactaatg gaaaaacgta 120
 tggggagatt ttanccaatt tangtntgta aatggggaga ctggggcagg cgggagagat 180
 ttgcagggtg naaatgggan ggctgggttg ttanatgaac agggacatag gaggtaggca 240
 ccaggatgct aaatca 256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(264)
 <223> n = A,T,C or G

<400> 211
 acattgtttt tttagatata agcattgaga gagctctcct caacgtgaca caatggaagg 60
 actggaacac ataccacat ctctgttctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatatgta tatattattc agttccatgt ttatagccta gtttaaggaga 180
 ggggagatac attcngaaag aggactgaaa gaaatactca agtnggaaaa cagaaaaaga 240
 aaaaaggag caaatgagaa gcct 264

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(328)
 <223> n = A,T,C or G

<400> 212
 acccaaaaat ccaatgctga atatttggct tcattattcc canattcttt gattgtcaaa 60
 ggatttaatg ttgtctcagc ttgggractt cagttaggac ctaaggatgc cagccggcag 120
 gtttatatat gcagcaacaa tattcaagcg cgacaacagg ttattgaact tgcccgccag 180

ttnaatttca	ttcccattga	cttgggatacc	ttatcatcag	ccagagagat	tgaaaattta	240
cccctacnac	tccttaactct	ctgganaggg	ccagtgggtg	tagctataag	cttggccaca	300
ttttttcttc	ctttattcct	ttgtcaga				328

<210> 213

<211> 250

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (250)

<223> n = A,T,C or G

<400> 213

acttatgagc	agagcgacat	atccnagtgt	agactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
catttatgcca	aagganatat	acatttcaat	tctccaaact	tcttctcat	tccaagagtt	180
ttcaatatct	gcatgaacct	gctgataanc	catgttaana	aacaaatata	tctctnacct	240
tctcatoggt						250

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (444)

<223> n = A,T,C or G

<400> 214

adccagaate	caatgctgaa	tatttggett	cattattccc	agattctttg	attgtcaaag	60
gatttaattg	tgtctcagct	tgggcacttc	agttaggacc	taaggatgcc	agccggcagg	120
tttatatatg	cagcaacaat	attcaagcgc	gacaaccagg	tattgaactt	gcccgcagct	180
tgaatttcat	tcccattgac	ttgggatact	tatcatcagc	canagagatt	gaaaatttac	240
ccctacgaat	ctttactctc	tggagagggc	cagtgggtgt	agctataagc	ttggccacat	300
ttttttttcc	tttatctctc	tgtcagagat	gcgattcacc	cataatgctan	aaaccacacg	360
agtgaacttt	acaaaatttc	tataganatt	gtgaataaaa	ccttacctat	agttgccatt	420
actttgctct	ccctaataata	cctc				444

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (366)

<223> n = A,T,C or G

<400> 215

acttatgagc	agagcgacat	atccaaagtgt	anactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
catttatgcca	aagganatat	acatttcaat	tctccaaact	tcttctcat	tccaagagtt	180
ttcaatatct	gcatgaacct	gctgataagc	catgttgaga	aacaaatata	tctctgacct	240
tctcatoggt	aagcagaggg	tgtaggcaac	atggaccata	gcgaaanaaa	aacttagtaa	300
tccaagctgt	tttctacact	gtaaccagggt	ttccaaccaa	ggtggaaata	tcttataact	360

ggtagc

366

<210> 216
 <211> 260
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaactccac tgcangaggy agggcogggc caggagaatc tccgcttgtc 60
 caagacaggy gootaaggag ggtctccaca ctgctnntaa gggctnttnc atttttttat 120
 taataaaaag tnnaaaaggc ctcttctcaa cttttttccc ttnggctgga aaatttaaaa 180
 atcaaaaatt tccnaaggt ntcaagctat catatatact ntacccctgaa aaagcaacat 240
 aattcttctt tccctccttt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggaacgca tataattgta 60
 tcttgccat aattttctat ttttaataagg aaatagcaaa ttgggggtggg gggaatgtag 120
 ggcattctac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180
 atgaataatc tgtatgatta tatgtctcta gagtagattt ataattagcc acctacccta 240
 atatecttca tgccttgtaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(205)
 <223> n = A,T,C or G

<400> 218
 accaaggtgg tgcattaccg gaantggatc aangacaccc tcttgggccc cccctgagca 60
 cccctatcaa ctcccttttg tagtaaaatt ggaaccttgg aaatgaccag gccaaagactc 120
 aggcctcccc agttctactg acctttgtcc ttangtntna ngccagggt tgctaggaaa 180
 anaaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219

tactgttttg tctcagtaac aataaataca aaaagactgg ttgtgttccg gccccatcca 60
accacgaagt tgattttctct tgtgtgcaga gctactgatt ttaaaggaca tgga 114

<210> 220
<211> 93
<212> DNA
<213> Homo sapien

<400> 220
actagccagc acaaaaggca gggtagcctg aattgcttcc tgccttttac attttcttca 60
aaataagcat ttagtgtca gtcctactg agt 93

<210> 221
<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> [1]... (167)
<223> n = A, T, C or G

<400> 221
actangtgca ggtgcgcaca aatatttgct gatattccct tcatcttggg ttccatgagg 60
tcttttgccc agcctgtggc tctactgtag taagttctct ctgatgagga gccagnatgc 120
ccccactac ctccctgac gctcccccana aatcacccaa cctctgt 167

<210> 222
<211> 351
<212> DNA
<213> Homo sapien

<400> 222
agggcgtggt ggggaggggg gtactgacct cattagtagg aggatgcatt ctggcaccoc 60
gttcttcaac tgtcccccaa tcttcaaaag gccatactgc ataaagtcaa caacagataa 120
atgtttgctg aattaaagga tggatgaaaa aaattaataa tgaatttttg cataatccaa 180
ttctctcttt tatatttcta gaagaagttt ctttgagcct attagatccc gggaaatctt 240
taggtgagca tgattagaga gcttgtaggt tgccttttca tatatctggc atatttgagt 300
ctcgtatcaa aacaatagat tggtaaaggt ggtattattg tattgataag t 351

<210> 223
<211> 383
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> [1]... (383)
<223> n = A, T, C or G

<400> 223
aaaacaaaca aacaaaaaaa acaattcttc attcagaaaa attatcttag ggactgatat 60
tggtaattat ggtcaattta atwrtctkt ggggcatttc cttacattgt cttgacaaga 120
tcaaaatgtc tgtgccaaaa ttttgtattt tatttggaga cttcttatca aaagtaatgc 180
tgccaaagga agtctaagga attagtagtg ttcccmteac ttgtttggag tgtgctattc 240
taaaagattt tgatttctct gaatgacaat tatattttca ctttggtggg ggaanagtt 300
ataggaccac agtcttcaat totgataact gtaaattaat cttttattgc acttgttttg 360
accattaagc tatatgttta aaa 383

ccctgaagg	cttctgtta	gaaatatgta	cagttacac	caataggaac	aacaaaaaga	60
aaaagtttgt	gacattgtag	tagggagtgt	gtacccctta	ctcccatca	aaaaaaaat	120
ggtacatgg	ttaaaggata	raagggcaat	atbtatcat	atgtctaaa	agaggaggaa	180
gagaaatac	tactttctcr	aattggaagc	ccttaaaggt	gctttgatac	tgaaggacac	240
aaatgtggcc	gtccatcttc	ctttaragtt	gcattgactt	gacaoggtaa	ctgttgagtt	300
tttaractcm	qatttgtaac					320

```
<210> 225
<211> 1214
<212> DNA
<213> Homo sapien
```

gaggactgca	gcccgcactc	gcagccctgg	caggcgccac	tggctcatgga	aaacgaattg	60
ttctgctcgg	gogtccctgg	gcataccgag	tgggtgctgt	cagccgcaca	ctgtttccag	120
aactcttaca	ccatcgggtt	gggcctgcac	agtcttgagg	cgcaccaaga	gccaggggagc	180
cagatggtgg	aggccagcct	ctccgtacgg	caccragagt	araacagacc	cttgctcgtc	240
aacgacctta	tgtcatcaa	gttggacgaa	tccgtgtccg	agtctgacac	cataccggagc	300
atcagcatbg	cttcgcagt	ccctaccgct	gggaactctt	gcctcgttct	tggctgggggt	360
ctgctgggga	cggccagaa	gcttaccgtg	ctgcagtgcc	tgaacgtgtc	ggttggtgtct	420
gaggaggtct	gcagtaagct	ctatgacccg	ctgtaccacc	ccagcatgtt	ctgcgccggc	480
ggaggggcaag	accagaaggga	ctcctgcacc	ggtgactctg	gggggcctct	gatctgcacc	540
gggtactttgc	agggccttgt	gtctttcggg	aaagccccgt	gtggccaagt	tggcgtgcc	600
ggtgtctaca	ccaacctctg	caaattcact	gagtggatag	agaaaaacct	ccaggccagt	660
taactctggg	gactgggaac	ccatgaaatt	gacccccaaa	tacatcctgc	ggaagggaatt	720
caggaattac	tgttccaggc	ccctctctcc	tcaggccccg	gagtcagagg	ccccagcccc	780
tcctccctca	aacraagggt	acagatcccc	agccccctct	ccctcagacc	caggagtcca	840
gacccccag	ccctctctcc	ctcagaccca	ggagtcagag	ccctctctcc	tcagacccag	900
gagtcagac	ccccagccc	ctctctctct	agacccaggg	gtccaggccc	ccaaacctct	960
ctccctcaga	ctcagagggt	caagccccca	acccctctct	ccccagacc	agaggtecag	1020
gtccagccc	ctctctctct	agacccagcg	gtccaatgcc	acctagactc	tcctgtgaca	1080
cagtgcctcc	ttgtggcaag	ttagcccaac	cttaccagtt	ggtttttcat	tttttgtccc	1140
ttccccctag	atccagaaat	aaagtctaa	aggagcgcaa	aaaaaanaaa	aaaaaanaaaa	1200
aaaaaanaaa	aaaa					1214

```
<210> 226
<211> 119
<212> DNA
<213> Homo sapien
```

accagtatg tgcagggaga cggaaaccca bgtgacagcc cactccacca ggggttccaa 60
agaacctggc ccagtcataa tcattcatcc tgacagtggc aataatcacg ataaccaagt 119

```
<210> 227
<211> B18
<212> DNA
<213> Homo sapien
```

acaattcata gggaagacca atgaggacag ggaatgacc cggctctccc ccaagccctga 50

tttttgcctac	atatgggggtc	ccttttccatc	ctttgcacaaa	acactggggct	ttctgagaaac	120
acggacgggtt	cttagcacaa	tttgtgaat	ctgtgtaraa	cggggctttg	cagggggagat	180
aattttcctc	ctctggaggga	aaggtggtga	ttgacaggca	gggagacagt	gacaaaggcta	240
gagaaagcca	cgctcgggct	tctctgaacc	aggatggaaac	ggcagacccc	tgaaaaacgaa	300
gcttgtccccc	ttccaatcag	ccacttctga	gaacccccat	ctaaacttct	actggaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaaagataa	cgtgacaaact	accatctaga	420
ggaaagggtg	cacccctcagc	agagaagccg	agagcttaac	tctggtcgtt	tccagagaca	480
acctgctggc	tgtcttggga	tgcgccacgc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcatgagagg	600
gacaggctct	gcctccaagc	cggctgaggg	cagcaaccac	tctcctcccc	tttctcagcg	660
aaagccatto	ccaccaatcc	agaccatacc	atgaagccac	gagacccaaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acaccatgca	cacacacaag	780
gtccacttct	aggttttcag	cctagatggg	agtctgtg			818

<210> 228

<211> 714

<212> DNA

<213> Homo sapien

<400> 228

actggagaca	ctgttgaact	tgatcaagac	ccagaccacc	ccagggtctcc	ttcgtgggat	60
gtcatgacgt	ttgacatacc	tttggaaoga	gcctcctcct	tggagatgg	aagacogtgt	120
tctgtggcga	cctggcctct	cctggcctgt	ttcttaagat	gcggagtcac	atttcaatgg	180
taggaaaagt	ggcttcgtaa	aatagaagag	cagtcactgt	ggaaactacca	aatggcgaga	240
tgtcoggtgc	acattggggg	gctttgggat	aaaagattta	tgagccaaact	attctctggc	300
accagattct	aggccagttt	gttccactga	agcttttccc	acagcagtec	acctctgcag	360
gctggcagct	gaatggcttg	cgggtggctc	tgtggcaaga	tcacactgag	atcgatgggt	420
gagaaggcta	ggatgcttgt	ctagtgttct	tagctgtcac	gttggctcct	tccagglttg	480
ccagacgggtg	ttggccactc	ccttctaaaa	cacaggcgcc	ctcctgggtga	cagtgaacctg	540
cogtggatatg	ccttggccca	ttccagcagt	cccagttatg	catttcaagt	ttggggtttg	600
ttctttccgt	taatgttctt	ctgtgttgtr	agctgtcttc	atttccctggg	ctaagcagca	660
ttgggagatg	tggaccagag	atccactcct	taagaaccag	tggcgaaaga	cactttcttt	720
cttcaactctg	aagtagctgg	tgggt				744

<210> 229

<211> 300

<212> DNA

<213> Homo sapien

<400> 229

cgagtctggg	ttttgtctat	aaagtttgat	ccctcccttt	ctcactccaa	tcatgtgaac	60
cattacacat	cgaataaaaa	gaaaggtggc	agacttgccc	aacgccaggc	tgacatgtgc	120
tgcagggttg	ttgtttttta	attattattg	ttagaaaagt	cacccacagt	ccctgttaat	180
ttgtatgtga	cagccaaactc	tgagaaggtc	ctatttttcc	acctgcagag	gatccagctc	240
cactaggctc	ctccttgccc	tcacactgga	gtctccggca	gtgtgggtgc	ccactgacat	300

<210> 230

<211> 301

<212> DNA

<213> Homo sapien

<400> 230

cagcagaaca	aatacaata	tgaagagtg	aaagatntca	taaaatctat	gctgagggaat	60
gagcgacagt	tcaaggaggga	gaagcttgca	gagcagctca	agcaagctga	ggagctcagg	120
caatataaag	tccgtggttca	cactcaggaa	cgagagctga	cccagtttaag	ggagaagttg	180
cgggaaggga	gagatgcctc	cctctcattg	aatgagcatc	tccaggccct	cctcaactccg	240
gatgaaccgg	acaagtccca	ggggcaggac	ctccaagaaa	cagacctcgg	cggcgaccac	300
g						301

<210> 231
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 231
 gcaagcaogc tggcaaatct ctgtcaggtc agctccagag aagccattag tcatttttagc 60
 caggaactcc aagtcacacat ccttggcaac tggggacttg cgcaggttag ccttgaggat 120
 ggcaacacgg gacttctcat caggaagtgg gatgtagatg agctgatcaa gacggccagg 180
 tctgaggatg gcaggatcaa tgatgtcagg ccggttggta ccgccaatga tgaacacatt 240
 tttttttgtg gacatgccat ccatttctgt caggatctgg ttgatgactc ggtcagcagc 300
 c 301

<210> 232
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 232
 agtaggtatt tegtgagaag ttoaacacca aaactggaac atagttctcc ttcaagtgtt 60
 ggcgacagcg gggttctctg attctgggat ataactttgt gtaaatatac agccacctat 120
 agaagagtc atctgtctgt aaggagagac agagaactct gggttccgtc gtctgttcca 180
 ogtgtgtac caagtgtctg tgcacgctgt ttacctgttc tcaactgaaa tctggctaata 240
 gctcttctgt atcaactctg attctgacaa tcaatcaatc aatggccctag agcaactgact 300
 g 301

<210> 233
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 233
 atgactgact tcccagtaag gctctcttaag gggtaagtag gaggatccac aggattctgag 60
 atgctaaggc cccagagatc gtttgatcca accctcttat ttccagaggg gaaaatgggg 120
 cctagaagtt acagagcacc tagctgggtg gctggcacc ctggccctcac acagactccc 180
 gagtagctgg gactacaggg acacagtcac tgaagcagge cctgttagca attctatggc 240
 tacaatttaa catgagatga gtagagactt tattgagaaa gcaagagaaa atccatatcaa 300
 c 301

<210> 234
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 234
 aggtcctaca catcgagact catccatgat tgatgatgaat ttaaaaatta caagcaaga 60
 catttctatc atcatgatgc ttctttttgt ttcttctctt cgttttcttc ttttctttt 120
 tcaatttcag caacatactt ctcaatttct tcaggattta aaatcttgag ggattgatct 180
 cgcctcatga cagcaagttc aatgtttttg ccacctgact gaacctcttc caggagtgc 240
 ttgatcacca gcttaatggc cagatcatct gcttcaatgg cttegtcagt atagttcttc 300
 t 301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235

tggggctgtg catcaggogg gtttgagaaa tattoaatte	tcagcagaag ccagaatttg	60
aattccctca tcttttaggg aatcatttac caggtttgga	gaggattcag acagctcagg	120
tgctttcact aatgtctctg aactctctgt cctctttctg	catggatagt ccaataaata	180
atgttatctt tgaactgatg ctctaggag agaataaag	aactctgagt gatatcaaca	240
ctagggtatc aaagaatat tagatttaag ctccactgg	tca	283

<210> 236

<211> 301

<212> DNA

<213> Homo sapien

<400> 236

aggtctctca ccaactgect gaagcagggt taaaattggg	aagaagtata gtgcagcata	60
aatactttta aatcgatcag atttccctaa cccacatgca	atcttcttca ccagaagagg	120
toggagcagc atcatttaata ccaagcagaa tgcgtaatag	ataaatacaa tgggtatatag	180
tgggtagacg gcttcattgag tccagtgtac tctggtatcg	taactctggac ttgggttcta	240
aagcatcgtg taccagtcag aaagcatcaa tactcgacat	gaacgaatat aaagaacacc	300
a		301

<210> 237

<211> 301

<212> DNA

<213> Homo sapien

<400> 237

cagtggtagt ggtggtggac gtggcgctgg tegtggtgcc	ttttttggtg cccgtcacaa	60
actcaatttt tgttcgctcc ttttgggeet ttccaattt	gtccatctca attttctggg	120
ccttggctaa tgcctcatag taggagtcct cagaccagcc	atggggatca aacatatact	180
ttgggtagct ggtgccaaag cgtcaatgg cccagaatgg	atcagcttct cgtaaatcta	240
gggttcggaa attctttctt ctttgggata atgtagtcca	tatccattcc ctcttttct	300
t		301

<210> 238

<211> 301

<212> DNA

<213> Homo sapien

<400> 238

gggcagggtt tttttttttt ttttttgatg gtgcagaccc	ttgctttatt tgtctgaact	60
gttcacagtt cagccccctg ctccgaaaac caacggggcc	gctaaggaga ggaggaggca	120
ccttgagact tccggagtcc aggtctctca gggttcccca	gcccataaat cattttctgc	180
accccttgcc tgggaagcag ctccctgggg ggtgggaatg	ggtgaactaga agggatttca	240
gtgtgggacc cagggtctgt tcttcacagt agggagtgga	agggatgaact aatttcttta	300
t		301

<210> 239

<211> 239

<212> DNA

<213> Homo sapien

<400> 239

ataagcagct aggyaattct ttatttagta atgtcctaac	ataaaagtcc acataactgc	60
ttctgtcaaa ccatgatact gagctttgtg acaaccaga	aataactaag agaaggcaaa	120
cataatacct tagagatcaa gaaacattta cacagttcaa	ctgtttcaaa atagctcaac	180
attcagccag tgagtagagt gtgaatgccr gcatacarag	tatacaggte cttcaggga	239

<210> 240

<211> 300
 <212> DNA
 <213> Homo sapien

<400> 240
 ggctcctaattg aagcagcagc ttccacattt taacgcaggt ttaoggtgat actgtccttt 60
 gggatctgcc ctccagtggg acctttttaag gaagaagtgg gcccaagcta agttccacat 120
 gctgggtgag ccagatgact tctgttccct ggtcactttc ttcaatgggg cgaatggggg 180
 ctgccagggt tttaaaatca tgccttcctc tgaagcacac ggtaacttca cctcctcac 240
 gctgtgggtg taatttgatg aaaataccca ctttgttggc ctttctgaag ctataatgtc 300

<210> 241
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 241
 gaggtctggg gctgagggtt ctgggctagg aagaggaggt ctgtggagct ggaagccaga 60
 cctcttttggg ggaaactcca gcagctatgt cgggtgtctc gagggaatgc aacaaggctg 120
 ctctccatg tattggaaaa ctgcaaaactg gactcaactg gaaggagtg ctgtgccag 180
 tgtgaagAAC cagcctgagg tgacagaaac ggaagcaaac aggaacagcc agtcttttct 240
 tctcctcctc gtcatacggc ctctctcaag catcctttgt tgcagggggc ctaaaaggga 300
 g 301

<210> 242
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 242
 cagaggctct gggatgcaac caatcactct gtttcaogtg acttttatca ccatacaatt 60
 tgtggcatct cctcattttc tacattgtag aatcaagagt gtaaatatat gtatatogat 120
 gtcttcaaga atatatcatt ccttttccac tagaaccctc tcaaatata agtcaagaat 180
 cttaatatca acaaatatat caagcaact ggaaggcaga ataactacca taatttagta 240
 taagtaccca aagttttata aatcaaaagc cctaattgata accattttta gaattcaatc 300
 a 301

<210> 243
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 243
 aggttaagtc cagtttgaag ctcaaaagat ctggtatgag cataggctca tggacgacat 60
 ggtggcccaa gctatgaaat cagagggagg ctcatctgg gcctgtaaaa actatgatgg 120
 tgacgtgcag tggactctg tggcccaagg gtatggctct ctgggcata tgaccagagt 180
 gctggtttgt ccagatggca agacagtga agcagaggct gccacaggga ctgtarccc 240
 tcaataccgc atgttcaga aaggacagga gacgtccacc aatcccattg ctccatttt 300
 t 301

<210> 244
 <211> 300
 <212> DNA
 <213> Homo sapien

<400> 244
 gctggtttgc aagaatgaaa tgaatgattc tacagctagg acttaacctt gaaatggaaa 60
 gtcattgcaat cccatttgca ggaatctgtc gtgcacatgc ctctgtagag agcagcatc 120

ccagggacct	eggaaacagt	tgacactgta	aggtgcttgc	cccccaagac	acatcctaaa	180
aggtgttgta	atgggtgaaaa	cgctcttcctt	ctttattgco	ccttcttatt	tatgtgaaca	240
actgtttgtc	ttttgtgtat	ctttttttaa	ctgtaaagtt	caattgtgaa	aatgaatato	300

<210> 245

<211> 301

<212> DNA

<213> Homo sapien

<400> 245

gtctgagtat	ttaaaatggt	attgaaatta	cccccaacca	atgttagaaa	agaaagaggt	60
tatatactta	gataaaaaat	gaggtgaatt	actatccatt	gaaatcatgc	tcttagaatt	120
aaggccagga	gatattgtca	ttaatgtara	cttcaggaca	ctagagtata	gcagccctat	180
gttttcaaa	agcagagatg	caatttaata	ttgttttaga	tcaaaaaggg	cactcaatac	240
agctaatsaa	atgaaagacc	taatttteta	agcaattcct	tataatttac	aaagtcttaa	300
g						301

<210> 246

<211> 301

<212> DNA

<213> Homo sapien

<400> 246

ggtctgtcct	acaatgcctg	cttcttgaaa	gaagtcggca	ctttctagaa	tagctaaata	60
acctgggctt	attttaaaga	actatcttga	gtccagattg	gttttcttat	ggctaaaata	120
agtgtctctt	gtgaaaatta	aataaaacag	ttaattcaaa	gccttgatat	atgttaccac	180
taacaatcat	actaaatata	ttttgaagta	caaagtctga	catgctctaa	agtgacaacc	240
caaatgtgtc	ttacaaaaca	cgttcctaac	aaggtatgct	ttacactacc	aatgcagaaa	300
c						301

<210> 247

<211> 301

<212> DNA

<213> Homo sapien

<400> 247

aggctctttg	gcagggtcta	tggatcagag	ctcaaatctg	agggaaaggg	atttcgggta	60
gcctaagagg	ggaactggcg	gcagcacaac	caagggaagg	aagggtgttt	cccccaogct	120
gtgtcctgtg	ttcaggtgcg	acacacaatc	ctcatgggaa	caggatcacc	catgcgctgc	180
ccttgatgat	caagggttgg	gtttaagtgg	attaagggag	gcaagtctct	ggttccttgc	240
cttttcaaac	catgaagtca	ggtctctgtat	ccctcctttt	cctaactgat	attctaacta	300
a						301

<210> 248

<211> 301

<212> DNA

<213> Homo sapien

<400> 248

aggctccttg	agatgccatt	tcagccgaag	gactcttctw	ttcggaagta	cccccttact	60
attaggaaga	ttcttagggg	taatttttct	gaggaaggag	aactagccaa	cttaagaatt	120
acaggaagaa	agtgttttgg	aagacagcca	aagaaataaa	agcagattaa	attgtatcag	180
gtacattcca	gctgtttggc	aactccataa	aaacatttca	gatttctaac	cogaatttag	240
ctaattgagac	tggatttttg	ttttttatgt	tgtgtgtcgc	agagctaaaa	actcagttcc	300
c						301

<210> 249

<211> 301

<212> DNA

<213> Homo sapien

<400> 249

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gtccagagga agcacctggc gctgaactag gcttgccctg ctgtgaactt gcaacttggag    60
ccctgacgct gctgttctcc ccgaaaaacc cgcacgacct ccgcgatctc cgtcccgccc    120
ccaggagagc acagcagtga ctccagagctg gtcgcacact gtgcctccct cctccaccgc    180
catcgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggatggaaag    240
actgaatctt tgactcagaa ttgtttgctg aaaagaatga tgtgacttcc ttagtcattt    300
a

```

<210> 250

<211> 301

<212> DNA

<213> Homo sapien

<400> 250

```

ggctctgtgac aaggacttgc aggctgtggg aggcagtgga cccctaaccac tacacttctc    60
cttactcttta ttggtttgat aaacataatt attctaaaca ctactttatt tccagttgac    120
cataagcaca tcagtacttt tctctggctg gaatagtaaa ctaaagtatg gtacatctac    180
ctaaaagact actatgttga ataatacata ctaatgaagt attacatgat ttaaagacta    240
caataaaacc aaacatgctt ataacattaa gaaaaacaat aaagatacat gattgaacc    300
a

```

<210> 251

<211> 301

<212> DNA

<213> Homo sapien

<400> 251

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gcccaggtcc tacatttggc ccagtttccc cctgcatact ctccagggcc cctgcctcat    60
agacaacctc atagagcata ggagaactgg ttgccctggg ggcaggggga ctgtctggat    120
ggcagggggtc ctcaaaaatg ccactgtcac tggcaggaaa tgcttctgag cagtacacct    180
cattgggata aatgaaaagc ttcaagaaat ctccaggctc actctcttga aggcacggaa    240
cctctggagg ggggcagtggt aatcccagct ccaggacgga tctgttgaa aagatatact    300
c

```

<210> 252

<211> 301

<212> DNA

<213> Homo sapien

<400> 252

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gcaaccaatc actctgttcc acgtgacttt taccaccata caatttcttg catttctca    60
ttttctacat tctagaatca agagtgtaaa taatgttata tccatgtctt caagaatata    120
tcattctctt ttcactagga acccattcaa aatataagtc aagaatctta atatcaacaa    180
atatatcaag caaacctggaa ggcagaataa ctaccataat ttagtataag taccraaagt    240
tttataaatc aaaagcccta atgataacca tttttagaat tcaatcatca ctgtagaatc    300
a

```

<210> 253

<211> 301

<212> DNA

<213> Homo sapien

<400> 253

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ttccctaaag agatgttatt ttgttggggt ttgttccccc tccctctcga ttctcgtacc    60
caactaaaaa aaaaaaataa agaaaaaatg tgctgcgttc tgaaaaataa ctcccttagct    120

```



```

tggctctgatt gttttcagac cttaaaatat aaactctgtt cacaagcttt aatccatgtg 180
gattttttttt cttagagaaac cacaacacat aaaaggagca agtcggactg aatacctgtt 240
tccatagtgc ccacagggtt ttctccacat ttctccata ggaaatgct ttttcccaag 300
g 301

```

```

<210> 254
<211> 301
<212> DNA
<213> Homo sapien

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```

<400> 254
cgctgcgcct ttcccttggg ggagggggcaa ggccagaggg ggtccaagtg cagcaogagg 60
aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaaatcccc 120
ccaaatctct tcatcttacc ctgggtggact cctgactgta gaattttttg gttgaaacaa 180
gaaaaaataa aagcttttga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc 240
acttaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgc 300
t 301

```

```

<210> 255
<211> 302
<212> DNA
<213> Homo sapien

```

```

<400> 255
agcttttttt tttttttttt tttttttttt ttcatkaaaa aatagtgcct tttattataa 60
attactgaaa tgttttottt ctgaatatat atataatat gtgcaaagtt tgacttggat 120
tgggattttg ttgagttctt caagcatctc ctaataacct caagggcctg agtagggggg 180
agggaaaagg actggaggtg gaatttttat aaaaaacaag agtgattgag gcagattgta 240
aacattatta aaaaacanga aacaaacaaa aaatatagaga aaaaaaccac ccaaacacac 300
aa 302

```

```

<210> 256
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (301)
<223> n - A,T,C or G

```

```

<400> 256
gttccagaaa acattgaagg tggcttccca aagtctaaact agggataccc cctctagcct 60
aggacctcc tccccacacc tcaatccacc aaaccatcca taatgcaccc agataggccc 120
acccccaaaa gcctggacac cttgagcaca cagttatgac caggacagac tcatctctat 180
aggcaaatag ctgctggcaa actggcatta cctggtttgt ggggatgggg gggcaagtgt 240
gtggcctctc ggcctggtta gcaagaacat tcagggtagg cctaagttan tegtgttagt 300
t 301

```

```

<210> 257
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 257
gttggtggagg aactctggct tgctcattaa gtccctactga ttttcaactat cccctgaatt 60
tcccacttta tttttgtott tcaactatgc aggccttaga agaggtctac ctgcctccag 120
tcttacctag tccagtctac cccctggagt tagaatggcc atcctgaagt gaaaagtaat 180

```

```

gtcacattac tcccttcagt gatttcttgt agaagtgcc atccctgaat gccaccaaga      240
tcttaattct cactatctta atcttatctc tttagactct cttaacaccc gagaaggctc      300
c                                              301

```

```

<210> 258
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

```

```

<400> 258
cagcagtagt agatgccgta tgcgcgcacg cccagcacte ccaggatcag caccagcacc      60
aggggcccag ccaccaggcg cagaagcaag ataaacagta ggctcaagac cagagccacc      120
cccagggraa caagaatcca ataccaggac tgggcataaat cttaacacat cttaacactg      180
atgtctcggg cattgaggct gtcaataana cgtctgatcc ctgctgtatg gtggtgtcat      240
tggtgatccc tgggagcgcc ggtggagtaa cgttggtcca tggaaagcag cggccacaa      300
c                                              301

```

```

<210> 259
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

```

```

<400> 259
tcataatagc aaacaaatgc agactangcc tcaggcagag actaaaggac atctcttggg      60
gtgtcttgaa gtgatttggg cccctgaggg cagaccccta agtaggaate ccagtgggaa      120
gcaaagccat aaggaagccc aggatctctt gtgatcagga agtgggcccag gaaggctctg      180
tcagctcac atctcatctg catgcagcac ggaacggatg cggccactgg gtcttggctt      240
ccctcccatc ttctcaagca gtgtccttgt tgagcattt gcatacttgg ctccaggtgg      300
c                                              301

```

```

<210> 260
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 260
tttttttctt ccttaaggaa aaagaaggaa caagtctcat aaaaacaaat aagcaatgg      60
aagggtgtctt aacttgaaaa agattaggag tcaactggttt acaagttata attgaatgaa      120
agaactgtas cagccacagt tggccatttc atgccaatgg cagcaaacaa caggattaac      180
tagggcaaaa taaataagtg tgtggaagcc ctgataagtg cttaataaac agactgattc      240
actgagacat cagtacctgc ccgggocggc gctcgagcog aattctgcag atatccatca      300
c                                              301

```

```

<210> 261
<211> 301
<212> DNA
<213> Homo sapien

```

<400> 261

```

aactattcga gcaaatcctg taactaatgt gtctccataa aaggttttga actcagtgaa      60
tctgttcca tccacgattc tagcaatgac ctctcggaca tcaagctcc tcttaagggt      120
agcaccact attccataga attcatcagc aggaataaaa ggctcttcag aaggttcaat      180
ggtagacatc aattttctct gataatttag attcctcaca accttcctag ctaagtgaag      240
ggcatgatga tcatccaaag ccagtggtc acttactcca gaatttctgc aatgaagatc      300
a                                          301

```

<210> 262

<211> 301

<212> DNA

<213> Homo sapien

<400> 262

```

gaggagagcc tgttacagca ttgttaagca cagaatactc caggagtatt tgtaattgtc      60
tgtgagcttc ttgcgcgaag tctctcagaa atttcaaaag atgcaaatcc ctgagtcacc      120
cctagaattc ctaaaaccaga tccctctggg ctggaacctg gcactctgca tttgtaatga      180
gggtcttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtccc      240
catcattacc cccacattat aatgggtag attcagagca gatactctcc agcaagaat      300
c                                          301

```

<210> 263

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 263

```

tttagcttgt ggtaatgac tcacaaaact gattttaaaa tcaagttaat gtgaattttg      60
aaaattacta cttaatccta attcacaata acaatggcat taaggtttga cttgagttgg      120
ttcttagtat tttttatggt aaataggctc ttaccacttg caaatcactg gccacatcat      180
taatgactga cttcccagta aggtctctta aggggttaagt angaggatcc acaggatttg      240
agatgctaag gcccagaga tcgtttgata caacctctt attttcagag gggaaaatgg      300
g                                          301

```

<210> 264

<211> 301

<212> DNA

<213> Homo sapien

<400> 264

```

aaagacgtta aaccactcta ctaccacttg tggaaactct aaagggtaaa tgacaaascc      60
aatgaatgac tctaaaaaca atatttacct tteatggttt gttagacata aaaaaacaag      120
gtggatagat ctagaattgt aacattttta gaaaaccata scatttgaca gatgagaasg      180
ctcaattata gatgcaaagt tataactaaa ctactatagt agtaaagaaa tacatttcac      240
acccttcata caaattcact atcttggtt gaggcactcc ataaaatgta tcacgtgcac      300
a                                          301

```

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

```
<210> 266
<211> 301
<212> DNA
<213> Homo sapien
```

<400> 266						
taccgtctgc	ccttcotccc	atccaggcca	tctgcgaatc	tacatgggtc	ctcctattcg	60
acaccagatc	actcttttct	ctaccacacg	gcttgctatg	agcaagagac	acaacctcct	120
ctcttctgtg	ttccagcttc	ttttcctggt	cttcccaccc	cttaagttct	attcctgggg	180
atagagacac	caatacccat	aacctctctc	ctaagcctcc	ttataaaccca	gggtgcacag	240
cacagactcc	tgacaaactg	taaggccaat	gaactgggag	ctcacagctg	gctgtgcctg	300
a						301

```
<210> 267
<211> 301
<212> DNA
<213> Homo sapien
```

c400> 267						
aaagagcaca	ggccagctca	gcctgccctg	gccatctaga	ctcagcctgg	ctccatgsgg	60
gttctcagtg	ctgagtcgat	ccaggaaaag	ctcacctaga	ccttctgagg	ctgaatcttc	120
atcttcacag	gcagcttctg	agagccctgat	attcctagcc	ttgatggctc	ggagtaaaag	180
ctcattctga	tccctctctt	tcttttcttt	caagttggct	ttcttcacat	ccctctgttc	240
aattcgcttc	agcttctctg	cttttagccct	catttcacga	agcttctctc	ctttggcatc	300
t						301

```
<210> 268
<211> 301
<212> DNA
<213> Homo sapien
```

<400> 268						
aatgtctcac	tcaactactt	cccagcctac	cgtggcctaa	ttctgggagt	tttcttctta	60
gatctctggga	gagctgggtc	ttctaaggag	aaggagggaag	garagatgta	actttggatc	120
tcaagagga	agtctaattg	aagtaattag	tcaacggtcc	ttgttttagac	tcttgggaata	180
tgctgggtgg	ctcagtgagc	cctttctggag	aaagcaagta	ttattcttta	ggagtaacca	240
cttcccatgg	ttctacttcc	taccatcctc	aattgtatat	catgtattct	ttggagaact	300
a						360

```
<210> 269
<211> 301
<212> DNA
<213> Homo sapiens
```

c400> 269						
taacaatata	cactagctat	ctttttaact	gtccatcatt	agcaccaatg	aagattcaat	60
aaaattacct	ttattcacac	atctcaaac	aattctgcaa	attcttagtg	aagtttaact	120
atagtcacag	accttaata	ttcacattgt	tttctatgtc	tactgaaaat	aagttcacta	180
cttttctgga	tattctttac	aaaatcttat	taaattccct	ggtattatca	cccccaatta	240
tacagtagca	caaccacctt	atgtagtttt	tacatgatag	ctctgttaga	gtttcacatc	300
t						301

<210> 270
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 270
 cattgaagag cttttgcgaa acatcagaac acaagtgtt ataaaattaa ttaagcctta 60
 cacaagaata catattcctt ttatttctaa ggagttaaac atagatgtag ctgatgtgga 120
 gagcttgcctg gtgcagtga tcttggataa cactattcat ggccgaattg atcaagtcac 180
 ccaactcctt gaactggatc atcagaagaa ggggtgtgca cgatatactg cactagataa 240
 tggaccaacc aactaaattc tctcaccagg ctgtatcagt aaactggctt aacagaaaac 300
 a 301

<210> 271
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 271
 aaaagggttct cataagatta acaattttaa taaatatgtg atagaacatt cttctctcatt 60
 ttatatagctc atcttttaggg ttgatattca gticcatgtt cccttgctgt tcttgatcca 120
 gaactgcaat cacttcatca gctgtattc gctccaattc tctatcaagt gggcccaagg 180
 tgaaccacag agccacagca cactctttc ccttgggtgac tgccttcacc ccatgagggt 240
 tctctcctcc agatganaac tgatcatgcy cccacatttt ggggtttata gaagcagtcac 300
 c 301

<210> 272
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 272
 taaattgcta agccacagat aacaccaatc aaatggaaca aatcaactgtc ttcaaatgtc 60
 ttatcagaaa acccaatgag cctggaatct tcataatacc taacacatgcc gtatttagga 120
 tcaataaatt cctcatgat gagcaagaaa aattcttttg gcacccctcc tgcateraca 180
 gcattctctc caacaaatat aaccttgagt ggcttcttgt aatctatgtt ctttgttttc 240
 ctaaggactt ccattgcac tctacaata tttctctctac gcaccactag aattaagcag 300
 g 301

<210> 273
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 273
 acatgtgtgt atgtgtatct ttgggaaan aanaagacat cttgtttayt atttttttgg 60
 agagangctg ggacatggat aatcacwtaa tttgctayta tyactttaat ctgactyga 120

```

gaacogteta aanaataaat ttaccatgtc dtatatctct tatagtatgc ttatttcacc 180
tcttctctgt ccagagagag tatcagtgac ananatttma gggtagamac atgmattggg 240
gggacttnty ttacngagm accctgccc ggcgcctcg makcngant cgcgaananc 300
t 301

```

```

<210> 274
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

```

```

<400> 274
cttatatact cttctctcga ggcaaaagag gagatgggtc atgtagacaa ttctttgagg 60
aacagtaaat gattattaga gagaangaat ggaccaagga gacagaatc aacttgtaaa 120
tgattctctt tggaaatcga atgagatcaa gaggccagct ttagcttggt gaaaagtcca 180
tctaggtatg gttgcattct cgtctctctt tctgcagtag ataatgaggt aaccgaaggc 240
aattgtgctt cttttgataa gaagctttct tggtcatac aggaatctc aganaaagtc 300
c 301

```

```

<210> 275
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A,T,C or G

```

```

<400> 275
tcgggtgtcag cagcaogtgg cattgaacat tgcaatgtgg agcccaaac acaganaatg 60
gggtgaaatt ggccaacttt ctactaaact atgttggcaa ttttgccacc aacagtaagc 120
tggtccttct aataaaagaa aattgaaagg tttctcacta aacggaatta agtagtggag 180
tcaagagact ccagggctc agcgtacctg ccggggcggo cgtctgaagc cgaattctgc 240
agatatccat cacactggcg gncgctcgan catgcatac gaaggnccaa ttgcacctat 300
a 301

```

```

<210> 276
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 276
tgtacacata ctcaataaat aaatgactgc attgtgggat tattactata ctgattatat 60
ttatcatgtg acttctaat agaaaatgta tccaaaagca aaacagcaga tatadcaaat 120
taaagagaca gaagatagac attaacagat aaggcaactt atacattgag aatccaaatc 180
caatacattt aaacatttgg gaaatgaggg ggacaaatgg aagccagatc aattttgtgt 240
aaaactatc agtatgtttc ctttgcttca tgtctgagaa ggctctcctt caatggggat 300
g 301

```

```

<210> 277
<211> 301
<212> DNA
<213> Homo sapien

```

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 277
 ttgttgatg tcaagtatttt attacttggg ttatgagtgc tcaactggga aattctaaag 60
 atacagagga cttaggaggaa gcagagcaac tgaatttaat ttaaaagaag gaaaacattg 120
 gaatcatggc actcctgata ctttcccaaa tcaacactct caatgcccc aactcgtcct 180
 caccatagtg gggagactaa agtggccacg gatttgctt angtggtcag tgcgttctga 240
 gttcctgtc gattacatct gaccagtctc ctttttcga agtccttcg tccaatcttg 300
 c 301

<210> 278
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 278
 taccataga ctccagcctg ggcaacagag caagacctgt ctcaaaagcat aaaatgggaat 60
 aecatatcaa atgaaacagg gaaaatgaag ctgacaattt atggaagcca ggccttctca 120
 cagttcttac tgttattatg cattacttgg gaatttatat aagcccttaa taataatgcc 180
 aatgaacatc tcatgtgtgc tcacaatgtt ctggcactat tataagtgtc tcacaggttt 240
 tatgtgttct tcttaacttt atggantagg tactcggccg cgaacacgtt aagccgaatt 300
 c 301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 279
 aaagcaggaa tgacaaagct tgcctttctg gtatgttcta ggtgtattgt gacttttact 60
 gttatatcaa ttgccaatat aagtaaatat agattatata tgtatagtgt ttcacaaagc 120
 tttagacctt accttcacgc caccaccacg tgcctgatat ttcagagtca gtcatttggt 180
 atacatgtgt agttccaaag cacataagct agaaaaaa atatttctag ggagcactac 240
 catctgtttt cacatgaaat gccacacaca tagaactcca acatcaattt cattgcacag 300
 a 301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280
 ggtactggag ttttccctcc ctgtgaaaac gtaactactg ttgggagtga attgaggatg 60
 tagaaagggt gtggaaccaa attgtggta atggaaatag gagaatatgg ttctcactct 120

tgagaaaaaa	acctaaagatt	agcccaggta	gttgccctgta	acttcagttt	ttctgcccgg	180
gtttgatata	gttttagggt	ggggcttagat	taagatctaa	attacatcag	gacaaagaga	240
cagactatta	actccacagt	taattaagga	ggatgtgtcc	atgtttattt	gttaaaagcg	300
t						301

<210> 281
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 281						
aggtacaaga	aggggaatgg	gaaagagctg	ctgctgtggc	attgttcaac	ttggatatto	60
gccgagcaat	ccaaatccctg	aatgaagggg	catctctctga	aaaaggagat	ctgaatctca	120
atgtggtagc	aatggcttta	tcgggttata	cggatgagas	gaactccctt	tggagagaaa	180
tgtgtagcac	actgogatta	cagctaaata	acccgtattt	gtgtgtcatg	tttgcatttc	240
tgacagtgta	aacaggatct	tacgatggag	ttttgtatga	aaacaaagtt	gcagtacctc	300
g						301

<210> 282
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 282						
caggtactac	agaattaaa	tactgacaag	caagtagttt	cttggcgtgc	acgaattgca	60
tccagaaccc	aaaaattaag	aaattcaaaa	agacattttg	tgggcacctg	ctagcacaga	120
agtcagaaag	caaagcccag	gcagaacctat	gctaacctta	cagctcagcc	tgcacagaag	180
cgcagaagca	aagccraggc	agaacctatg	taaccttaca	gctcagcctg	cacagaagcg	240
cagaagcaaa	gccccaggcag	aacatgctaa	ccttacagct	cagcctgcac	agaagcacag	300
a						301

<210> 283
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 283						
atctgtatac	ggcagacaaa	ctttatarag	tgtagagagg	tgagcgaaag	gatgcaaaag	60
cactttgagg	gctttataat	aatatgctgc	ttgaaaaaaa	aaatgtgtag	ttgatactca	120
gtgcatctcc	agacatagta	aggggttgct	ctgaccaatc	aggtgatcat	ttttctcttc	180
acttcccagg	ttttatgcaa	aaatcttgtt	aaattctata	atggtgatat	gcacttttta	240
ggaaaacatat	acatttttaa	aaatctatct	tahgtaaaga	ctgacagacg	aatttgcttc	300
g						301

<210> 284
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 284						
caggtacaaa	acgtatttaa	gtggccttaga	atttgaacat	ttgtggctct	tatttaacttt	60
gcttcgtgtg	tgggcaaaag	aacatctctcc	ctaaatatat	attaccaaga	aaagcaagaa	120
gcagattagg	tttttgacaa	aacaaacagg	ccaaaagggg	gctgacctgg	agcagagcat	180
ggtgagaggc	aaggcatgag	agggcaagtt	tgttgtggac	agatctgtgc	ctactttatt	240
actggagtaa	aagaaaacaa	agttcattga	tgtcgaagga	tatatcagct	gttagaasatt	300
a						301

<210> 285

<211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 285
 acatcaccat gatcggatcc cccacccatt atacgttgta tgtttacata aatactcttc 60
 aatgatcatt agtggttttaa aaaaatatct gaaaactcct tctgcatccc aatctctaac 120
 caggaaagca aatgctatct acagacctgc agccctccc tcaaacnaaa ctatttctgg 180
 attaaatatg tctgaattct tttagaggta cactgactagg caaatgctat ttacgatctg 240
 caaagctgtc ttgaagagtc aaagccccca tgtgacacag atttctggac cctgtaacag 300
 t 301

<210> 286
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 286
 taccactgca ttccagcctg ggtgacagag tgagactccg tctccaaaaa aaactttgct 60
 tgtatattat ttttgcccta cagtggatca ttctagtagg aaaggacagt aagatttttt 120
 atcaaaatgt gtcatgccag taagagatgt tatattcttc tctcatttct tccccccca 180
 aaaataagct acctatagc ttataagtct caaatttttg ctttttacta aaatgtgatt 240
 gtttctgttc attgtgtatg ctccatcacc tatattaggc aaattccatt tttcccttg 300
 t 301

<210> 287
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 287
 tacagatctg ggaactaaat attaaaaatg agtggtgctg gatatatgga gaatgttggg 60
 cccagaagga acgtagagat cagatattac aacagctttg ttttgagggt tagaaatatg 120
 aaatgatttg gttatgaacg cacagttagg gcagcagggc cagaatcctg accctctgcc 180
 ccgtggttat ctccctccca gcttggctgc ctcatgttat cacagtatto cattttgttt 240
 gttgcatgta ttgtgaagcc atcaagattt tctcgtctgt tttccttcca ttggtaatgc 300
 t 301

<210> 288
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 288
 gtacacctaa ctgcaaggac agctgaggaa tgtaatgggc agccgctttt aaagaagtag 60
 agtcaatagg aagcaaat ccagttccag ctcagtctgg gtatctgcaa agctgcaaaa 120
 gatcttttaa gacaatttca agagaatatt tcaataaagt tggcaatttg gagatcatc 180
 aaagcatctt gcttttgtga ttcaatttag ctcatctggc cactggaaga atccaaacag 240
 tctgccttaa ttttggtatga atgcctgatg gaatttcaat aatttagaaa gttaaaaaaa 300
 a 301

<210> 289
 <211> 301

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 289
ggtaactgt ttccatgta tgtttctaca cattgetaac tcaagtgtcc tggaaactta 60
gcttttgatg tctccaaagta gtccaccttc atttaactct ttgaaactgt atcatctttg 120
ccaagtaaga gtggtggcct atttcagctg ctttgacaaa atgactggct cctgacttaa 180
cgttctataa atgaatgtgc tgaagcaaaag tgcccatggt ggcggcgaan aagagaaaga 240
tgtgttttgc ttggactct ctgtggtccc ttccaatgct gtgggtttcc aaccagnnga 300
a 301

<210> 290
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 290
acactgagct cttcttgata aatatacaga atgcttggca tatacaagat totatacbac 60
tgactgatct gttcattttct ctcacagctc ttaaccccaa aagcttttcc accctaagtg 120
ttctgacctc cttttctaat cacagtaggg atagaggcag anccacctac aatgaacatg 180
gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctagcagtgc 240
tgccctgaac aaaaacattt ctccatgtct cattttcttc atgacctcaag taacagtga 300
a 301

<210> 291
<211> 301
<212> DNA
<213> Homo sapien

<400> 291
caggtaacca tttcttctat cctagaacaa ttctatttta tgttgktgaa acataacaaac 60
tatatcagct agattttttt totatgcttt acctgctatg gaaaatttga cactattctg 120
tttactcttt tgtttatagg tgaatcacaa aatgtatttt tatgtattct gtagtccaat 180
agccatggct gtttacttca ttttaatttat ttagcatana gacattatga aaaggacctaa 240
acatgagctt cacttcccca ctaactaatt agcatctggt atttcttaac cgtaatgcct 300
a 301

<210> 292
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 292

```

accttttagt agtaatgtct aataataaat aagaatcaa tttataagg tccatatgc      60
tgtattaaat aatttttaag tttaaaagat aaataaccat caattttaat gttgggtattc    120
aaaaccaaaag natataaccg aaaggaaaaa cagatgagac ataaaatgat ttgcnagatg    180
ggaaatatag taatttatga atgttnatta aattccagtt ataatagttg ctacacactc    240
tactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa    300
a                                          301

```

```

<210> 293
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 293
ggtaaccaagt gctggtgcca gcctgttaac tgttctcaat gaaaagtctg gctaattgctc    60
ttgtgtagtc atttctgatt ctgacaatca atcaatcaat ggcttagagc actgactgtt    120
aacacaaaag tcaactagcaa agtagcaaca gctttaagtc taaatacaaa gctgttctgt    180
gtgagaattt tttaaaaggc tacttgtata ataacccttg tcatttttaa tgaacctgg    240
ccgcgaccac gctaagccga attctgcaga tatccatcac actggcggcc gctcgagcat    300
g                                          301

```

```

<210> 294
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> [1]...(301)
<223> n = A,T,C or G

```

```

<400> 294
tgaccataaa caatatacac tagctatctt tttactgtc catcattagc accaatgaag    60
attcaataaa attaccttta ttacacacac tcaaaacaa tctgcasaat cttagtgaag    120
tttaactata gtcacaganc ttaaatattc acattgtttt ctatgtctac tgaataaag    180
ttcactactt ttctgggata ttctttacaa aatcttatta aaattcttgg tattatcacc    240
cccaattata cagtagcacc accaacttat gtgttttta catgatagct ctgtagaggt    300
t                                          301

```

```

<210> 295
<211> 305
<212> DNA
<213> Homo sapien

```

```

<400> 295
gtactctttc tctccctcc tctgaattta attctttcaa cttgcaattt gcaaggatta    60
cacatttcac tgtgatgtat attgtgttgc aaaaaaaaaa gtgtctttgt ttaaaattac    120
ttggtttgtg aatccatctt gctttttccc cattggaaac agtcaattaac ccactctcga    180
actggtagaa aaactctcga agagctagtc fatcagcctc tgacaggtga attggatggt    240
tctcagaacc atttcaccca gacagcctgt tctatctctg tttataaat tagtttgggt    300
tctct                                          305

```

```

<210> 296
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 296
aggtaactat ggagctgct aaaataatat ttgatagtaa aagtatgtaa tgtgctatct    60

```

```

cacctagtag taaactaaaa ataaactgaa accttatgga atctgaagtt attttcccttg      120
attaaataga attaataaac caatatgagg aaacatgaaa ccatgcacac tactatcaac      180
tttgaaaaag tgattgaacg aaccacttag ctttcagatg atgaacacac ataagtcatt      240
tgtcattact ataaatttta aaatctgtta ataagatggc ctatggggag gaanaagggg      300
c                                          301

```

<210> 297

<211> 300

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(300)

<223> n = A,T,C or G

<400> 297

```

actgagtttt aactggacgc caagcaggca aggetggaag gttttgctct ctttgtgcta      60
aaggttttga aaaccttgaa ggagaatcat ttgacaaga agtacttaag agtctagaga      120
acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt      180
tccatcattg ggagtgcaac ggccatccct caaatttctg ctgggctggc ctgagtggtc      240
acgcacctc ggccgcgacc acgctaagcc gaattctgca gatatccac acactggcgg      300

```

<210> 298

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 298

```

tatggggttt gtcaccccaa agctgatgct gagaaaggcc tccctggggc cctcccccgc      60
ggcatctgag agacctgggt ttccagtggt tctggaaatg ggtcccagtg ccgcccggctg      120
tgaagctctc agatcaatca cgggaagggc ctggcggttg tggccacctg gaccacacct      180
gtctgtcttg ttacatttc actaycaggt tttctctggg cattacnatt tgttccccta      240
caacagtgac ctgtgcattc tgcgtgggco tgcgtgtctc gcaggctggc ctcagcgagg      300
t                                          301

```

<210> 299

<211> 301

<212> DNA

<213> Homo sapien

<400> 299

```

gttttgagac ggagtttca ccttggttgc cagactggac tgcattggca gggctctctg      60
tcactgcacc ccttgccctc caggttcgag caattctcct gcttcagcct ccaggttagc      120
tgggattgca ggctcagcc accataccca gctaattttt ttgtattttt agtagagacg      180
gagtttgcgc atgttggcca gctgggtctc aactcctgac ctcaagcgac ctgcctgcct      240
cggcctccca aagtgtctga attataggca tgagtcaaca cgcccagcct aaagatattt      300
t                                          301

```

<210> 300

<211> 301

<212> DNA

<213> Homo sapien

<400> 300

attcagtttt	atttgetgce	ccagtatctg	taaccaggag	tgccacaaa	tcttgccaga	60
tatgtcccac	accactggg	aaagggtccc	acctggctac	ttcctctatc	agctgggtca	120
gctgcattcc	acaaggttct	cagcctaattg	agtttcacta	ccctgccagtc	tcaaaaactta	180
gtaaagcaag	accatgacat	tccccacagg	aaatcagagt	ttgcccaccc	gtcttgttac	240
tataagcct	gcctctaaca	gtccttgcct	cttcacaccc	atcccagagc	catacccat	300

g

301

<210> 301

<211> 301

<212> DNA

<213> Homo sapien

<400> 301

ttaaattttt	gagaggataa	aaaggacaaa	taattctagaa	atgtgtcttc	ttcagttctgc	60
agaggacccc	aggtctccaa	gcaaccacat	ggtcaggggc	atgaataatt	aaaagttcgt	120
gggaactcac	aaagaccctc	agagctgaga	caccacacac	agtgggagct	cacaaagacc	180
ctcagagctg	agacacccac	aacagtggga	gtccacaaag	acctcagag	ctgagacacc	240
cacaacagca	ctctgttcag	ctgcacacatg	tgtgaataag	gatgcaatgt	ccagaagtgt	300

c

301

<210> 302

<211> 301

<212> DNA

<213> Homo sapien

<400> 302

aggtacacat	ttagcttggt	gtaaatgact	cacaaaactg	attctaaaat	caagttaatg	60
tgaattttga	aaattactac	tcaatcctaa	ttcacataaa	caatggcatt	aaggtttgac	120
ttgagttggc	tcttagtatt	atttatggta	aataggctct	taccacttgc	aaataactgg	180
ccacatcatt	aatgactgac	ttcccagtaa	ggctctctaa	ggggtaagta	ggaggatcca	240
caggatttga	gatgctaagg	cccagagat	cgtttgatcc	aacctctcta	tttcagagg	300

g

301

<210> 303

<211> 301

<212> DNA

<213> Homo sapien

<400> 303

aggtacccaac	tgtggaaata	ggtagaggat	cattttttct	ttccatatac	actaagttgt	60
atattgtttt	ttgacagttt	aacacatctt	cttctgtcag	agattctttc	acaatagcac	120
tggctaattgg	aactacogct	tgcattgtta	aaatgggtgt	ttgtgaaatg	atcataggcc	180
agtaacgggt	atgtttttct	aactgatctt	ttgtctgttc	caaagggaac	tcaagacttc	240
cattcgatttt	atatctgggg	tctagaaaag	gagttaatct	gttttccctc	ataaattcac	300

c

301

<210> 304

<211> 301

<212> DNA

<213> Homo sapien

<400> 304

acatggatgt	tatttttgcag	actgtcaacc	tgaatttgta	tttgcttgac	attgcctaatt	60
tattagtttc	agtttcagct	tacccacttt	ttgtctgcaa	catgcaraas	agacagtggc	120
cttttttagtg	tatcatatca	ggaatcatct	cacattgggt	tgtgccatta	ctgggtgcagt	180
gactttcagc	cacttgggta	aggtggagtt	ggccatctgt	ctccactgca	aaattactga	240

ttttcctttt gtaatttaata agtgtgtgtg tgaagattct ttgagatgag gtatatatct 300
c 301

<210> 305
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 305
gangtacagc gtggtcaagg taacaagaag aaaaaaatgt gagtggcatc ctgggatgag 60
caggggggaca gacctggaca gacacgttgt cathttgtgc tgtgggtagg aaaaatgggag 120
taaaggaggga gaacagata caaaatctcc aactcagtat taaggatctc tcatgcctag 180
aatatttggtg gaaacaagaa tacattcata tggcaaatca ctaaccatgg tggaaacaaa 240
ttctgggatt taagttggat accaangaaa ttgtattaaa agagctgttc atggaataag 300
a 301

<210> 306
<211> 8
<212> PRT
<213> Homo sapien

<400> 306
Val Leu Gly Trp Val Ala Glu Leu
1 5

<210> 307
<211> 637
<212> DNA
<213> Homo sapien

<400> 307
acagggrratg aagggaaggg gagaggatga ggaagccccc ctggggattt gggttgggtcc 60
ttgtgatcag gtggttatatg gggcttatcc ctacaaagaa gaatcccagaa ataggggacac 120
attgaggaat gatacttgag cccasagagc attcaatcat tgttttattt gecttmtttt 180
cacaccattg gtgaggaggg gattaccacc ctggggttat gaagatgggt gaacacccca 240
cacatagcac cggagatactg agatcaacag tttcttagcc atagagattc acagcccaga 300
gcaggaggac gcttgccacac catgcaggat garatggggg atgcgctcgg gattggtgtg 360
aagaagcaag gactgttaga ggcaggcttt atagtaacaa gacgggtggg caaactctga 420
ttccgtggg ggaatgtcat ggtcttgctt tactaagttt tgagactggc aggtagtga 480
actcattagg ctgagaacct tgtggaatgc acttgacca actgatatag gaagtagcca 540
gggtgggagcc ttcccagtg ggtgtgggac atacttggca agatktttgtg gcactcctgg 600
ttacagatac tggggcagca aataaaactg aatcttg 637

<210> 308
<211> 647
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(647)
<223> n = A,T,C or G

<400> 308

acgattttca	ttatcatgta	aatcgggtca	ctcaaggggc	caaccacagc	tgggagccac	60
tgcacagggg	aaggttcata	tgggaatttc	tactgcccac	ggttctatac	aggatataaa	120
ggngcctcac	agtatagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
ccacccctct	gaccttttgg	aactcctctg	accttttaga	acaagcctac	ctaatactctg	240
ctagagaaaa	gaccaacaac	ggcctcaaa	gatctcttac	catgaaggtc	tcagctaatt	300
cttggctaag	atgtgggttc	cacattaggt	cttgaatatg	gggggaaggg	tcaatttgc	360
catttttgtt	gtggataaa	tcaggatgac	cagggggcag	agcagggggc	tgccttgcctt	420
gggsacaaatg	gctgagcata	taaccatagg	ttatggggaa	caaaacaaca	tcaaaagtcac	480
tgtatcaatt	gccatgaaga	cttgagggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	ttttctctct	gcttctgact	tgataaaagg	ggacct		647

<210> 309

<211> 460

<212> DNA

<213> Homo sapien

<400> 309

actttatagt	ttaggctgga	cattggaaaa	aaaaaaaagc	cagaacaaca	tgtgatagat	60
aatatgattg	gctgcacact	tcragactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gagcacatct	tcagcaagag	ggggaataac	tcattcattt	tggccagcag	ttgtttgatc	180
accaaaccac	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaagtcog	240
ggggaattca	ttctctggca	ttttaattgg	actccttatg	tgagagcagc	ggctaccacg	300
ctggggtggt	ggagcgaacc	cgtaactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctgta	gcactcaaat	420
ttgtcttggt	tttgccttct	ggtgtgtaag	attcttaagt			460

<210> 310

<211> 539

<212> DNA

<213> Homo sapien

<400> 310

acgggactta	tcaataaaag	ataggaaaag	aagaaaactc	aaatattata	ggcagaaatg	60
ctaaaggttt	taaaatatgt	caggattgga	agaaggcatg	gataaagaac	aaagtctcgt	120
taggaaagag	aaacacagaa	ggaagagaca	caataaaaagt	cattatgtat	tctgtgagaa	180
gtcagacagt	aagatttgtg	ggaatgggtg	tgggttgttg	tatggatgtg	atttttagcaa	240
taattcttat	ggcagagaaa	gtataaatcc	tttagcttgc	gtgaatgacc	acttgctgaa	300
ttcctcaagg	taggcatgat	gaaggagggt	ttagaggaga	cacagacaca	atgaactgac	360
ctagatagaa	agccttagta	tactcagcta	ggaatagtga	ttctgagggc	acactgtgac	420
atgattatgt	cattacatgt	atggtagtga	tggggatgat	aggaagggaag	aacttatggc	480
atattttcac	ccccacaasa	gtcagttaaa	tattgggaca	ctaaccatcc	aggtcaaga	539

<210> 311

<211> 526

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(526)

<223> n = A,T,C or G

<400> 311

cgaatttgag	ccaatgacat	agaattttac	aaatcaagaa	gcttattctg	gggccatttc	60
ttttgaogtt	ttctctaaac	tactaaagag	gcattaatga	tccataaatt	atattatcta	120
catttacagc	atttaaaatg	tgttcagcat	gaaatattag	ctacagggga	agctaaataa	180

attaaacatg	gaataaagat	ttgtcccttaa	atataatcta	caagaagact	ttgatatttg	240
tttttcacaa	gtgaagcaat	cttataaagt	gtcatabcct	ttttgggggaa	actatgggaa	300
aaaatgggga	aactctgaag	ggttttaagt	atcttacctg	aagctacaga	ctccataacc	360
tctctttaca	gggagctcct	gcagccccta	cagaaatgag	tggctgagat	tcttgattgc	420
acagcaagag	cttctctctt	aaacccctttc	ccctttttagt	atctgtgtat	caagtataaa	480
agttctataa	actgtagtnt	acttattttta	atccccaaag	cacagt		520

<210> 312

<211> 500

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (500)

<223> n = A,T,C or G

<400> 312

cctctctctc	cccacccctc	gactctagag	aactggggtt	tctcccagta	ctccagcaat	60
tcatttctga	aagcagttga	gccactttat	tccaaagtac	actgcagatg	ttcaaactct	120
ccatttctct	ttcccttcca	cctgccagtt	ttgctgacct	tcaacttgte	atgagtgtaa	180
gcattaaagga	cattatgctt	cttcgabbct	gaagacaggc	cctgctcatg	gatgactctg	240
gcttcttagg	aaaatatttt	tcttccaaaa	tcagtaggaa	atctaaactt	atcccccttt	300
tgcagatgtc	tagcagcttc	agacatttgg	ttaagaaacc	atgggaanaa	aaaaaatcct	360
tgctaattgt	gtttcctttg	taaacccanga	ttcttatttg	notgggtatg	aatatcagct	420
ctgaacgtgt	ggtaaagatt	cttgtgtttg	aatataggag	aaatcagttt	gctgaaaagt	480
tagtcttaat	tctctattgg					500

<210> 313

<211> 718

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (718)

<223> n = A,T,C or G

<400> 313

ggagattttgt	gtgggtttgca	gccgagggag	accaggaaga	tctgcatggt	gggaaggacc	60
tgatgatcca	gagggtgagaa	ataagaaagg	ctgctgaact	taccatctga	ggccacacat	120
ctgctgaaat	ggagataaatt	aacatcacta	gaaacagcaa	gatgacaata	taatgtctaa	180
gtagtgaacat	gtttttgcac	atttccagcc	cttttaasta	tccacacaca	caggaaggcc	240
aaaagggaagc	acagagatcc	ctgggagaaa	tgccccgccg	ccatcttggg	tcatcgatga	300
gcctcgccct	gtgcctgntc	ccgcttgtga	gggaaggaca	ttagaaaaatg	aattgatgtg	360
ttccttaaaq	gatggcagga	aaacagatcc	tgttgtggat	atttatttga	acgggattac	420
agatttgaaa	tgaagtcaca	aagtgaacat	taccaatgag	aggaaaaacag	acgagaaaat	480
cttgatgggt	cacaagacat	gcaacaaaca	aaatggaaata	ctgtgatgac	acgagcagcc	540
aactggggag	gagataccac	ggggcragagg	tcaggattct	ggccctgctg	cctaactgtg	600
cgttatacca	atcatttcta	tttctaccct	caaacaagct	gtngaataac	tgacttacgg	660
ttctctntggc	ccacatcttc	atnattccacc	ccntcnnntt	aannttantic	caaantgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

gtttattttac attacagaaa aaacatcaag acaatgtata ctatttcaaa tatatccata	60
cataatcaaa tatagctgta gtacatgttt tcattgggtg agattaccac aaatgcaagg	120
caacatgtgt agatctcttg tottattctt ttgtctataa tactgtattg tgtagtccaa	180
gctctcggtg gtccagccac tgtgaaacat gctcccttta gattaacctc gtggacgctc	240
ttgttgtatt gctgaactgt agtgccctgt attttgettc tgtctgtgaa tctgttgtct	300
tctggggcat ttccctgtga tgcagaggac caccacacag atgacagcaa tctgaatt	358

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

taccacctcc ccgctggcac tgatgagccg catcaccatg gtcaccagca ccataaaggc	60
ataggtgatg atgaggacat ggaatgggcc cccaaggatg gtctgtccaa agaagcgagt	120
gacccccatt ctgaagatgt ctggaaacctc taccagcagg atgatgatag ccccaatgac	180
agtcaccago tccccgacca gccggatata gtccctaggg gtcatgtagg ctccctgaag	240
tagcttctgc tgtaagaggg tgttgtcccg ggggctctgt cggttattcg tccctgggctt	300
gagggggogg tagatgcagc acatggtgaa gcagatgatg t	341

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

agactgggca agactcttac gccccacact gcaatttggg ctgtttgcog tatccattta	60
tgtgggacct tctcgagttt ctgattataa acacccactg agcgatgtgt tgactggact	120
cattcagggg gctctgggtg caatattagt t	151

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

agaactagtg gatcctaatt aaataacctga aacatatatt ggcatttacc aatggctcaa	60
atcttcattt atctctggcc ttaaccttgg ctccctgagc tggggccagc agatcccagg	120
ccagggctct gttcttgcca cactgtctg a	151

<210> 318

<211> 151

<212> DNA

<213> Homo sapien

<400> 318

actggtggga ggcgctgttt agttggctgt ttccagaggg gtctttcggg gggacctcct	60
gctgcagggt ggagtgctct tattcttggc gggagaccgc acattccact gctgaggctg	120
tggggggcgt ttatcaggca gtgataaaca t	151

<210> 319

<211> 151

<212> DNA

<213> Homo sapien

<400> 319

aactagtggg tccagagcta taggtacagt gtgatctcag ctttgcaaac acattttcta	60
catagatagt actaggtatt aatagatatg taaagaaaga aatcacacca ttaataatgg	120

taagattggg tttatgtgat tttagtgggt 151

<210> 320
<211> 150
<212> DNA
<213> Homo sapien

<400> 320
aactagtggg tccactagtc cagtgtgggt gaattccatt gtgttggggc tctagatcgc 60
gagcggctgc cctttttttt tttttttttt ggggggaatt tttttttttt aatagttatt 120
gagtgttcta cagcttacag taaataccat 150

<210> 321
<211> 151
<212> DNA
<213> Homo sapien

<400> 321
agcaactttg tttttcattc aggttatattt aggccttagg tttcctctca cactgcagtt 60
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tgctcttgag aatcaaaat cttcatacac t 151

<210> 322
<211> 151
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(151)
<223> n = A,T,C or G

<400> 322
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attgtgcagg gctcgttca nactccagt t 151

<210> 323
<211> 151
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(151)
<223> n = A,T,C or G

<400> 323
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nagactcant tactaccag tttgtgggtt twtggggagaa atgtaaatgg acagttagct 120
gttcaatyea aaagacatt anccatgtg g 151

<210> 324
<211> 461
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
 <222> {1}... (461)
 <223> n = A,T,C or G

<400> 324
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 aaaaacgcac aagagccct gccctgccc agctganga c 461

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 <212> DNA
 <213> Homo sapien

<400> 325
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 <211> 1215
 <212> DNA
 <213> Homo sapien

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<210> 327
 <211> 220

<212> PRT

<213> Homo sapien

<400> 327

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Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
35     40     45
Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
50     55     60
Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
65     70     75     80
Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
85     90     95
Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
100    105    110
Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
115    120    125
Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
130    135    140
Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
145    150    155    160
Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
165    170    175
Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
180    185    190
Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
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Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
210    215    220

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<210> 328

<211> 334

<212> DNA

<213> Homo sapien

<400> 328

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atccgcagtg ggtgctgtca gccacacact gtttccagaa ctctacacc atcgggctgg      180
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<210> 329

<211> 77

<212> PRT

<213> Homo sapien

<400> 329

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Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr
35     40     45
His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu
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Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala
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<210> 330
<211> 70
<212> DNA
<213> Homo sapien

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<210> 331
<211> 22
<212> PRT
<213> Homo sapien

<400> 331
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Val Ser Gly Ser Cys Ser
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<210> 332
<211> 2507
<212> DNA
<213> Homo sapien

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<210> 333

<211> 3030

<212> DNA

<213> Homo sapien

<400> 333

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<210> 334

<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

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 <212> DNA
 <213> Homo sapien

<400> 335

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<210> 336
 <211> 147
 <212> PRT
 <213> Homo sapien

<400> 336
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 20 25 30
 Pro Lys Gln Pro Gln Lys Arg Ser Arg Ala Ala Phe Ser His Thr Gln
 35 40 45
 Val Ile Glu Leu Glu Arg Lys Phe Ser His Gln Lys Tyr Leu Ser Ala
 50 55 60
 Pro Glu Arg Ala His Leu Ala Lys Asn Leu Lys Leu Thr Glu Thr Gln
 65 70 75 80
 Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
 85 90 95
 Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
 100 105 110
 Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
 115 120 125
 Ser Tyr Pro Tyr Tyr Pro Tyr Leu Tyr Cys Val Gly Ser Trp Ser Pro
 130 135 140
 Ala Phe Trp
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<210> 337
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 337
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<210> 338
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 338
 Leu Leu Ala Asn Asp Leu Met Leu Ile
 1 5

<210> 339
 <211> 318
 <212> PRT
 <213> Homo sapien

<400> 339
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Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Val Thr Gly					
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Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg					
	50		55		60
Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu					
	65		70		75
Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val					
	85		90		95
Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys					
	100		105		110
Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala					
	115		120		125
Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met					
	130		135		140
His Ile Gly Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu					
	145		150		155
Leu Glu Lys Leu Lys Glu Ser Ala Pro Ser Arg Ile Val Asn Val Ser					
	165		170		175
Ser Leu Ala His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly					
	180		185		190
Glu Lys Phe Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala					
	195		200		205
Asn Ile Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly					
	210		215		220
Val Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val					
	225		230		235
Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe Phe					
	245		250		255
Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys Ala Leu					
	260		265		270
Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser Asp Cys His					
	275		280		285
Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr Ile Ala Arg Arg					
	290		295		300
Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu Pro Ile Asp					
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<210> 340
 <211> 483
 <212> DNA
 <213> Homo sapien

<400> 340	
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tgtcgaatct cggcattcga ctcttgcctc aaactgtatg aagacacctg actgcacgtt	420
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<210> 341
 <211> 344
 <212> DNA
 <213> Homo sapien

<400> 341

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gctgccttac	aagtattaaa	tattttactt	ctttccataa	agagttagctc	aaaatatgca	180
attcaatttaa	taattctctga	tgatgggttt	atctgcagta	atatgtatat	catctattag	240
aetttaactta	atgaaaaact	gaagagaaac	aaatttgtaa	ccactagcac	ttaagtactc	300
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<210> 342

<211> 592

<212> DNA

<213> Homo sapien

<400> 342

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cctggcaggt	aaaccaatgc	caagagagtg	atggaaacca	ttggcaagac	tttgttgatg	180
accaggattg	gaattttata	aaaatattgt	tgatgggaag	ttgctaagg	gtgaattact	240
tccttcagaa	gagtgttaag	aaaagtccga	gatgctataa	tagcagctat	tttaattggc	300
aagtgccact	tggaagagag	ttcctgtgtg	tgtgaagtt	ctgaaggcca	gtcaaatcca	360
tcagcatggg	ctgtttgggtg	caaatgcaaa	agcacaggtc	tttttagcat	gctgggtctct	420
cccggtgtct	catgcaata	atcgtcttct	tctaaatttc	tcctaggctt	cattttccaa	480
agttcttctt	ggtttgtgat	gtctttctctg	ctttccatta	attctataaa	atagtattggc	540
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<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

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agacttcttg	attgtcagtc	tgtgtcacat	ccagtgattg	ttttggtttc	tgttcccttt	240
ctgactgccc	aaggggctca	gaaccccagc	aatcccttcc	tttcaactac	ttcttttttg	300
ggggtagttg	gaagggactg	aaattgtggg	gggaaggtag	gaggcacatc	actaangagg	360
aaacccccc	gctgaaaaaa	aa				382

<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

ctggggcctga	agctgtaggg	taaatcagag	gcaggcttct	gagtgatgag	agtcctgaga	60
caataggcca	cataaacttg	gctggatgga	acctcacaa	aaggtgggtca	cctctgtttt	120
gttttaggggg	atgccaagga	taaggccagc	tcagttatat	gaagagaagc	agaacaaaca	180
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caccttcctg	tgcctgaatg	gttgccaggt	cagaaaaatc	caccccttac	gagtggggct	300
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cctttctatt	atttgatcta	gaattgcgc	tccttttacc	cctaccatga	gccctacaaa	420
caactaacct	gccactaata	gttatgtcat	ccctcttatt	aatcctcctc	ctagccct a	480
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<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

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acctttttgag gtctctctca ccacctccac agccacogtc acogtgggat gtgctggatg      60
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gcgtgggcca ggaatcaca tctacactg cccaggagcc agacacattt atggaacaga      180
aaataacata tcggatttgg agagacactg ccaactggct ggagattaat ccggacactg      240
gtgccatttc c

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<210> 346

<211> 282

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(282)

<223> n = A,T,C or G

<400> 346

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cgcgctctctg acactgtgat catgacaggg gtccaacag aaagtgcctg ggccctcctt      60
ctaagtcttg ttacccaaaa aggaaaaaa aaaagatctt ctcaattaca aattctggga      120
agggagacta taactggctc ttgccttaag tgagaggtct tccctccgc accaaaaaat      180
agaaaggctt tctatttcac cggcccaggt agggggaagg agagtaactt tgagtctgtg      240
ggtctcattt cccaagggtc ctcaatgct catnaaaacc aa

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<210> 347

<211> 201

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(201)

<223> n = A,T,C or G

<400> 347

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acacacataa tattatataa tgccatctaa ttggaaggag ctttctatca ttgcaagtca      60
taaataataa ttttaaaaa ntactancag cttttaccta ngctcctaaa tgcttgtaaa      120
tgtgagactg actggaccca cccagaccca gggcaaaagt ccatgttacc atatactctt      180
tataaagaat tttttttgt c

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<210> 348

<211> 251

<212> DNA

<213> Homo sapien

<400> 348

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ctgttaatca caacatttgt gcatcaactg tgccaagtga gaaaatgttc taaatcaca      60
agagagaaca gtgccagaat gaaactgacc ctaagtccca ggtgcccctg ggcaggcaga      120
aggagacact cccagcatgg agggagggtt atcttttcat cctaggtcag gctacaaatg      180
ggggaagggt ttattataga actcccaaca gcccaactca ctctgcccac ccaccgatg      240
gcccgtcctc c

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<210> 349

<211> 251

<212> DNA

<213> Homo sapien

<400> 349

taaaaatcaa gccatttaaat tgtatctttg aaggtaaaaca atatatggga gctggatcac	60
aacccctgag gatgccagag ctatgggtcc agaacatggg gtggtattat caacagagtt	120
cagaagggtc tgaactctac gtgttaccag agaacataat gcaattcatg cattccactt	180
agcaattttg taaaatacca gaaacagacc ccaagagtct ttcaagatga ggaaaattca	240
actcctggtt t	251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

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cggtctggaat tgetctgggt atgatgacag agaaaatgat ctcttctctt gtgacaccaa	180
cacctgtaaa tttgatgggg aatgtttaag aattggagac actgtgactt gcgtctgtca	240
gttcaagtgc aacaatgact atgtgctgt gtgtggctcc aatggggaga gctaccagaa	300
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ccacatacct tgtccggaac attacaatgg cttctgcatg catgggaagt gtgagcatte	780
tatcaatatg caggagccat ctgtcagggt tgatgctggg tatactggac aacactgtga	840
aaaaaaggac tacagtgttc tatacgttgt tcccggtcct gtacgatttc agtatgtctt	900
aatgcgag	908

<210> 351

<211> 472

<212> DNA

<213> Homo sapien

<400> 351

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cattcaacttg attttaaaat cagwtttgyg agtcatttac cacaagctaa atgtgtacac	180
tatgataaaa acaaccattg tattectgtt ttctataaaca gtccataattt ctaaacctgt	240
atatatcctt cagacatcaat gaactttgtt ttcttttact ccagtaataa agtaggcaca	300
gatctgtcca caacaaactt gccctctcat gcccttgcctc tcaaccatgct ctgctccagg	360
tcagcccccct tttggcctgt ttgttttctc aaaaacctaa tctgcttctt gcttttctctg	420
gtaatatata tttagggaag atgttgcttt gccacacac gaagcaagt aa	472

<210> 352

<211> 251

<212> DNA

<213> Homo sapien

<400> 352

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tgtggataag gccaggteaa tggctgcaag catgcagaga aagaggtaca tgggagcgtg	120
caggctgcgt tccgtcctta cgtatgaagac cagcatgcag ttcccaaca ttgccactac	180
atcatatgga agggagggga agccaaccca gaattgggtt ttctctaate ctgggatacc	240
aataagcaca a	251

<210> 353
 <211> 436
 <212> DNA
 <213> Homo sapien

<400> 353
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 gtatccaaaa gcaaaacagg agatatacaa aattaagag agagaagata gacattaaca 180
 gataaggcaa cttatacatt gacaatccaa atccaataca tttaaacatt tgggaaatga 240
 ggggggacaaa tgggaagccar atcaaatatt tgtaaaacta ttcagtatgt ttcctttgct 300
 tcatgtctga raaggctctc ccttcaatgg ggatgacaaa ctccaaatgc cacacaaatg 360
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<210> 354
 <211> 854
 <212> DNA
 <213> Homo sapien

<400> 354
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 gtgagtgaan gatccccctt ataggagcac ttgggagaga tcatataaaa gctgactctt 420
 gagtacatgc agtaatgggg tagatgtgtg tgggtgtgtt tcattcctgc aagggtgctt 480
 gttagggagt gtttccagga ggaaccaagtc tgaaccaat catgaaataa atggtaggtg 540
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 caatatggaa ggtctcaatt tgcctatatt tgaataata attcagcttt ttgtatata 660
 aaataacaaa ggattgagaa tcatgggtgc caatgtataa aagaccaggg aaacataaat 720
 atatcaactg cataaatgta aaatgcctgt gaccaagaa gggcccaagg tggcagacaa 780
 cattgtaccc attttccctt ccaaaatgtg agcggcgggc ctgctgcttt caaggctgtc 840
 acacgggatg ttag 854

<210> 355
 <211> 676
 <212> DNA
 <213> Homo sapien

<400> 355
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 atccacaagt catacctgga tgtcagcgaa gagggcaagg aggcagcagc agccactggg 180
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 gcttaagaa aaccag 676

<210> 356

<211> 574
 <212> DNA
 <213> Homo sapien

<400> 356

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caagcttccc	atctttagat	ctcagtgoot	atgagtatct	gacacctgtt	cctctcttca	180
gtctcttagg	gaggctttaa	tctgtctcag	gtgtgctaag	agtgcacagc	caaggkggtc	240
aaaagtcac	aaaactgcag	tctttgctgg	gatagtaagc	caagcagtg	ctggacagca	300
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ttcttctgtc	tctgcctaga	ctggaataaa	aagccaatct	ctctcgtggc	acagggaagg	420
agatacaagc	togtttacat	gtgatagatc	taacaaaggc	atctacogaa	gtctggtctg	480
gatagacggc	acaggagagc	cttaggtcag	cgctgctggc	tggaggacat	tcttgagtc	540
agcttgcag	ccttctgcca	acagtacttt	cccc			574

<210> 357
 <211> 393
 <212> DNA
 <213> Homo sapien

<400> 357

tttttttttt	tttttttttt	tttttttttt	tacagaatat	aratgcttta	tcaactgkact	60
taatatggkg	kcttggtcac	tatacttaaa	aatgcaccac	tcataaatat	ttaattcagc	120
agccacacac	caaracttga	ttttatcaac	aaaaacccct	aaatataaac	ggaaaaaag	180
atagatataa	ttattccagt	tttttttaaa	cttaaaarat	attccattgc	cgaatttaara	240
araarataag	tgttatatgg	aaagaagggc	attcaagcac	actaaarasa	cctgaggkaa	300
gcataatctg	tacaaaatta	aactgtcctt	tttggcattt	taacaaattt	gcaacgktct	360
tttttttttt	ttttctgttt	tttttttttt	tac			393

<210> 358
 <211> 630
 <212> DNA
 <213> Homo sapien

<400> 358

acagggttaa	caggaggatc	cttgcctctc	eggagcttao	attctagcag	gaggacaata	60
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gcataagagta	gggaagctaa	tccagcacag	ggaggtcaca	gagacatccc	taagggaagt	180
gagtttaaac	tgagagaagc	aagtgcctaa	actgaaggat	gtgttgaaga	agaaggsgaga	240
gtagaacaat	ttgggcagag	ggaaccttat	agaccttaag	gtgggaaggc	tcaaggaact	300
gaaagagagc	tagaacagct	ggagccgttc	tccggtgtaa	agaggagtca	aagagataag	360
attaaagabg	tgaagattaa	gatcttggtg	gcattcaggg	attggcaact	ctacaagaaa	420
tcaactgaagg	gagtaatgtg	acattacttt	tcaattcagg	atggccattc	taactccagg	480
gggtagactg	gactaggtaa	gactggaggc	aggtagaact	cttctcaggc	ctgcgatatg	540
gaaagacaaa	aataagtggg	gaaattcagg	ggatagtgaa	aatcagtagg	acttaatgag	600
caagccagag	gttccctccac	aacaaccagt				630

<210> 359
 <211> 620
 <212> DNA
 <213> Homo sapien

<400> 359

acagcattcc	aaaatatata	tctagagact	aarrgtaaat	gctctatagt	gaagaagtaa	60
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ctcaccagaa	gaataaagtg	ctctgccagt	tattaaagga	ttactgctgg	tgaattaaat	180
atggcattcc	ccaagggaaa	tagagagatt	cttctggatt	atgttcaata	tttatttca	240

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aggattaaact gtttttaggaa cagatata a gcttcgccac ggaagagatg gacaaagcac 300
aaagacaaaca tgatacetta gysagcaaca ctaccctttc aggcataaaa tttgggagaaa 360
tgcaacatta tgcttcctga ataatatgta gaaagaaggc ctgatgaaaa tgacatcctt 420
aatgtaagat aactttataa gaattcttgg tcaataaaaa ttctttgaag aaaacatcca 480
aatgtcattg aacttatcaa tactatcttg gcataatacc tatgaaggca aaactaaaca 540
aaacaaaaagc tcacacccaa caaaaccato aacttatttt gtattctata acatacagga 600
ctgtaaaagat gtgacagtgt 620

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<210> 360
<211> 431
<212> DNA
<213> Homo sapien

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<400> 360
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tactcatcat ttttggccag cagttgtttg atcaccaaac atcatgccag aatactcagc 180
aaacottctt agctcttgag aagtcaaaag ccggggggaat ctattctctg caattttaat 240
tggactcctt atgtgagagc agoggtacc cagctggggt ggtggagcga acccgtcact 300
agtggacatg cagtggcaga gctctggta accacctaga ggaatacaca ggcacatgtg 360
tgatgcaag ogtgacacct gtagcactca aatttgtctt gtttttgtct ttcggtgtgt 420
agattcttag t 431

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<210> 361
<211> 351
<212> DNA
<213> Homo sapien

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<400> 361
aacctgattt ccgatcaaaa gaatcatcat ctttaacctg acttttcagg gaattactga 60
actttcttct cagaagatag ggcacagcca ttgccttggc ctcaottgaa gggctctgat 120
ttgggtctct tggctctctt ccaagtttcc cagccactcg agggagaaat atcgggaggt 180
ttgacttctt ccggggcttt ccgagggtct tcaccgtgag cctgcccgc ctcaaggctg 240
caatcctgga ttcaatgtct gaaacctcgc tctctgctg ctggacttct gaggcgctca 300
ctgccactct gtctccagc tctgacagct cctcatctgt ggtcctgttg t 351

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<210> 362
<211> 463
<212> DNA
<213> Homo sapien

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<400> 362
acttcacag gccataatgg gtgcctcccg tgagaatcca agcaaccttg gactgogcga 60
tgtagatgag ccggtgaag atottgcgca tgcggggtt cagggcgag ttcttggcgc 120
ccccgtcac agaaatgacc aggttgggtg ttttcagggt ccagtgcctg gtcagcagct 180
cgtaaaggat ttccggtcc gtgtcgcagg acagacgtat atacttccct ttcttcccca 240
gtgtctcaaa ctgaatatcc ccaaaggcgt cggtaggaan ttcttgggtg tgtttcttgt 300
agttccattt ctcaotttgg ttgatctggg tgccttccat gtgctgggtc tgggcatagc 360
cacacttgca cacattctcc ctgataagca ogatggtgtg gacaggaagg aaggatttca 420
ttgagcctgc ttatggaaac tggatattgt agcttaata gac 463

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<210> 363
<211> 653
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature

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<222> (1)...(653)

<223> n = A,T,C or G

<400> 363

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tgggaggcac	tacgcaagat	gggactgctg	cctgggggtga	gacatcctct	ccttgagagat	180
ctaapgaac	ttctcaccta	tgagtgttaa	agcagaaata	cctgnactac	agacgagtg	240
ccaacagcaa	ccccccggaa	gtatgagttc	ctctrgggcc	tccgttccca	ccatgagaac	300
tagcaagatg	naagtgttga	gancatttgc	agagggttcag	aaaagagacc	entcgtgact	360
ggctctgcaca	gttcatggag	gctgcagatg	aggccttgga	tgtcttgga	gctgctgcag	420
ctgaggccga	agccccggct	gaagcaagaa	cccgratggg	aattggagat	gaggctgtgt	480
ntggggccctg	gagctgggat	gacattgagt	ttgagctgct	gacctgggat	gaggaaggag	540
atcttggaga	tccttgggtcc	agaattccat	ttaccttctg	ggccagatac	caccagaatg	600
ccgctccag	attccctcag	acctttgcgg	gtcccattat	tggtcctggg	ggc	653

<210> 364

<211> 401

<212> DNA

<213> Homo sapien

<400> 364

actagaggaa	agacgttaaa	ccactctact	accacttgtg	gaactctcaa	agggtaaagt	60
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aaaacaaggc	ggatagatct	agaattgtaa	catttttaaga	aaaccatagc	atttgacaga	180
tgagaaagct	caattataga	tgcaaggtta	taactaaact	actatagtag	taagaaata	240
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acgtgcatag	taaatcttta	tatttgcctat	ggcgttgca	tagaggactt	ggactgcaac	360
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<210> 365

<211> 356

<212> DNA

<213> Homo sapien

<400> 365

ccagtgctcat	atttgggctt	aaaatttcaa	gaagggcact	tcaaatggct	ttgcatttgc	60
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taccagagca	tcaagtctct	gcagcaggct	attcttgggt	aaagaaatga	cttcacacaa	180
ctctccatcc	cctggctctt	gcttgggctt	tgcgttttgc	gcacatctct	cgttaatggg	240
gaactgtcag	atgtgtatag	tacagtittga	caagcrtggg	tccatacaga	ccgctggaga	300
acattoggca	atgtccctct	tgtagccagt	ttcttcttgc	agctcccgga	gagcag	356

<210> 366

<211> 1851

<212> DNA

<213> Homo sapien

<400> 366

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tcaattctct	taagcctttg	tgaactctcc	tctgatgtca	gctttaagtc	ttgttctgga	180
ttgtgtttt	cagaagagat	ttttaacatc	tgtttttctt	tgtagtccga	aagtaactgg	240
caattacat	gatgatgact	agaaacagca	tactctctgg	ccgtcttctc	agatcttgag	300
aagatacatc	aacattttgc	tcaagtagag	ggctgactat	acttgctgat	ccacaacata	360
cagcaagtat	gagagcagtt	cttccatctc	tatccagcgc	atttaaatte	gcttttttct	420
tgattaaaaa	tttcccaact	tgcgtttttt	gtcatgtat	accagtagc	agtgggtgtg	480
ggccatgctt	gtttttttgat	tcatatccag	caccgtataa	gagcagtgct	ttggccatta	540

atcttatcttc	attgtagaca	gcatagtgta	gagtggtatt	tccatactca	tctggaatat	600
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aaggtatgtc	ccttctatgc	ctgttttgct	gagggtttta	attctcgtgc	c	1851

<210> 367
 <211> 668
 <212> DNA
 <213> Homo sapien

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acctatataag	agcagtgctt	tggccattaa	tttatctctc	attttagaca	gcrtagtgya	180
gagtggtatt	tccatactca	tctggaatat	ttggatcagt	gccatgttcc	agcaacatta	240
acgcacattc	atcttccctg	cattgtaagg	cctgtcagta	ttagacccca	aaacaaatta	300
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agaaaactca	tttttatgcc	atgtattgaa	atcaaaccca	cctcatgctg	atatagtctg	420
ctactgcata	cctttatcag	agctgtcctc	tttttgttgt	caaggacatt	aagttgacat	480
cgtctgtcca	gcaggagttt	tactacttct	gaattcccat	tggcagaggg	cagatgtaga	540
gcagtcctat	gagagtgaga	agacttttta	ggaaattgta	gtgcactagc	tacagccata	600
gcaatgatcc	atgtaactgc	aaacactgaa	tagcctgcta	ttactctgcc	ttcaaaaaaa	660
aaaaaana						668

<210> 368
 <211> 1512
 <212> DNA
 <213> Homo sapien

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<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

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<210> 370

<211> 2184

<212> DNA

<213> Homo sapien

<400> 370

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tttcctctga gaactgcacc aataaataca aggatgctgg attttgtcaa atgccccttc      180
tgtgtctgtt gagatgctta tgtgactttg cttttaatcc tgtttatgtg attatcacat      240
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ctgcccagc ttgggataa cttgaggctg catcactggg gaagaaacac aytccgtgac      360
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tggatgaaga gtattacgtt gtgcagatat actgcagtgt cttcatctct tgatgtgtga      540
ttgggtagggt tccaccctgt tgcgcagat gacatgattt cagtaacctgt gtctggctga      600
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gatcagcaag tatagtcaag cctctacttg agcaaaatgt tgatgtatct tctcaagatc      1560
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cggtgaaaac ccatctctac taaaaataca aaaacttagc tgggtgtggg ggcggtgccc      2040
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<210> 371

<211> 1855

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1855)

<223> n = A,T,C or G

<400> 371

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acatgtttca	gtgaatagag	atcctgctcc	tttggcaagt	tcctaataaaa	cagtaataga	1800
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<210> 372

<211> 1059

<212> DNA

<213> Homo sapien

<400> 372

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gcgcttgrrg	agactmogat	gacagygcct	tcatggagcc	caggtaccac	gtcogtggag	180
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<210> 373

<211> 1155

<212> DNA

<213> Homo sapien

<400> 373

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<210> 374

<211> 2000

<212> DNA

<213> Homo sapien

<400> 374

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<210> 375
 <211> 2040
 <212> DNA
 <213> Homo sapien

<400> 375
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<210> 376
 <211> 329
 <212> PRT
 <213> Homo sapien

<400> 376
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 20 25 30
 Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
 35 40 45
 Leu Asp Gly Gln Gly lu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
 50 55 60

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Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
65          70          75          80
Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
          85          90          95
Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
          100          105          110
His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
          115          120          125
Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
          130          135          140
Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
145          150          155          160
Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
          165          170          175
Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
          180          185          190
Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
          195          200          205
Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
          210          215          220
Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
225          230          235          240
Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
          245          250          255
Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
          260          265          270
Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
          275          280          285
Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu
290          295          300
Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu
305          310          315          320
Ser Met Leu Phe Leu Val Ile Ile Met
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<210> 377
 <211> 148
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(148)
 <223> Xaa = Any Amino Acid

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<400> 377
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Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys
          35          40          45
Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu
          50          55          60
Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp
65          70          75          80
Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp
          85          90          95

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Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro
 100 105 120
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp
 115 120 125
 Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser
 130 135 140
 Lys Asn Lys Val
 145

<210> 378
 <211> 1719
 <212> PRT
 <213> Homo sapien

<400> 378
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 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val

			340					345					350			
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile	
		355					360					365				
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Asn	Val	Ser	Arg	Thr	Arg	Asn	Lys	
		370				375					380					
Pro	Arg	Thr	His	Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser	
385					390					395					400	
Ser	Val	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	
				405					410					415		
Cys	Arg	Cys	Phe	Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	
			420					425					430			
Thr	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	
		435					440					445				
Met	Gly	Lys	Trp	Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	
		450				455					460					
Lys	Ser	Asn	Val	Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	
465					470					475					480	
Thr	Leu	Arg	Asn	Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	
				485					490					495		
Cys	Arg	Gly	Ser	Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	
			500					505					510			
Asp	Ser	Ala	Phe	Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	
		515					520					525				
Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	
		530				535					540					
Leu	Ile	Val	Met	Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	
545					550					555					560	
Lys	Arg	Thr	Ala	Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	
				565					570					575		
Val	Lys	Leu	Leu	Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	
			580					585					590			
Lys	Lys	Arg	Thr	Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	
		595					600					605				
Cys	Ala	Leu	Met	Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	
		610				615					620					
Glu	Tyr	Gly	Asn	Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	
625					630					635					640	
Leu	Met	Ala	Lys	Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	
				645					650					655		
Asn	Lys	His	Gly	Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	
			660					665					670			
Gln	Gln	Val	Val	Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn		

				805					810					815	
Leu	Leu	Glu	Asn	Leu	Thr	Asn	Gly	Val	Thr	Ala	Gly	Asn	Gly	Asp	Asn
			820					825					830		
Gly	Leu	Ile	Pro	Gln	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Asn	Gln	Gln	Phe
		835					840				845				
Pro	Asp	Asn	Glu	Ser	Glu	Glu	Tyr	His	Arg	Ile	Cys	Glu	Leu	Val	Ser
	850				855						860				
Asp	Tyr	Lys	Glu	Lys	Gln	Met	Pro	Lys	Tyr	Ser	Ser	Glu	Asn	Ser	Asn
865				870						875				880	
Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu	Glu	Glu	Ser	Gln	Arg	Leu
			885					890						895	
Glu	Gly	Ser	Glu	Asn	Gly	Gln	Pro	Glu	Leu	Glu	Asn	Phe	Met	Ala	Ile
		900					905					910			
Glu	Glu	Met	Lys	Lys	His	Gly	Ser	Thr	His	Val	Gly	Phe	Pro	Glu	Asn
	915					920					925				
Leu	Thr	Asn	Gly	Ala	Thr	Ala	Gly	Asn	Gly	Asp	Asp	Gly	Leu	Ile	Pro
930					935					940					
Pro	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Ser	Gln	Gln	Phe	Pro	Asp	Thr	Glu
945				950						955				960	
Asn	Glu	Glu	Tyr	His	Ser	Asp	Glu	Gln	Asn	Asp	Thr	Gln	Lys	Gln	Phe
			965					970					975		
Cys	Glu	Glu	Gln	Asn	Thr	Gly	Ile	Leu	His	Asp	Glu	Ile	Leu	Ile	His
		980					985						990		
Glu	Glu	Lys	Gln	Ile	Glu	Val	Val	Glu	Lys	Met	Asn	Ser	Glu	Leu	Ser
	995					1000						1005			
Leu	Ser	Cys	Lys	Lys	Glu	Lys	Asp	Ile	Leu	His	Glu	Asn	Ser	Thr	Leu
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Arg	Glu	Glu	Ile	Ala	Met	Leu	Arg	Leu	Glu	Leu	Asp	Thr	Met	Lys	His
1025				1030					1035					1040	
Gln	Ser	Gln	Leu	Pro	Arg	Thr	His	Met	Val	Val	Glu	Val	Asp	Ser	Met
			1045					1050					1055		
Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met
	1060						1065					1070			
Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe	Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys
	1075					1080					1085				
Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr
1090					1095						1100				
Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Arg	His	Cys	Phe	Pro	Cys	Cys
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Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val	Gly	Ala	Ser	Gly	Asp	His	Asp	Asp
			1125					1130					1135		
Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn	Lys	Met	Gly	Lys	Trp	Cys	Cys	His
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Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp
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	1170				1175						1180				
Gly	Glu	Asp	Leu	Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val
1185				1190					1195					1200	
Pro	Arg	Lys	Asp	Leu	Ile	Val	Met	Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys
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Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala	Leu	His	Leu	Ala	Ser	Ala	Asn	Gly
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Asn	Ser	Glu	Val	Val	Lys	Leu	Leu	Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn
	1235						1240				1245				
Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr	Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys
	1250					1255					1260				
Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met	Leu	Leu	Glu	His	Gly	Thr	Asp	Pro

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 Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr
 1285 1290 1295
 Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp
 1300 1305 1310
 Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val
 1315 1320 1325
 His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala
 1330 1335 1340
 Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala
 1345 1350 1355 1360
 Val Cys Cys Gly Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn
 1365 1370 1375
 Ile Asp Val Ser Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr
 1380 1385 1390
 Ala Val Ser Ser His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr
 1395 1400 1405
 Lys Glu Lys Gln Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu
 1410 1415 1420
 Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly
 1425 1430 1435 1440
 Ser Glu Asn Ser Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn
 1445 1450 1455
 Lys Asp Gly Asp Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser
 1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
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 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
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 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
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 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
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 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 1680
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
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 Met Lys His Gln Ser Gln Leu
 1715

<210> 379
 <211> 656
 <212> PRT
 <213> Homo sapien

<400> 379

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Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp	35	40	45	
His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	50	55	60	
Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val	65	70	75	80
Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn	85	90	95	
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	100	105	110	
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe	115	120	125	
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His	130	135	140	
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met	145	150	155	160
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala	165	170	175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu	180	185	190	
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr	195	200	205	
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met	210	215	220	
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn	225	230	235	240
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys	245	250	255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly	260	265	270	
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val	275	280	285	
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr	290	295	300	
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile	305	310	315	320
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu	325	330	335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val	340	345	350	
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile	355	360	365	
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu	370	375	380	
Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn	Ser	Gln	Pro	Glu	Lys	385	390	395	400
Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly	Asp	Arg	Glu	Val	Glu	405	410	415	

Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
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 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys
 515 520 525
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly
 530 535 540
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser
 545 550 555 560
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr
 565 570 575
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln
 580 585 590
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln
 595 600 605
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys
 610 615 620
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile
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 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
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<210> 380
 <211> 671
 <212> PRT
 <213> Homo sapien

<400> 380
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 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
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 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala

				165					170					175			
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu		
			180					185					190				
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr		
	195						200					205					
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met		
	210					215					220						
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn		
225					230					235					240		
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys		
			245						250					255			
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly		
			260					265					270				
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val		
	275					280						285					
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr		
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Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile		
305					310						315				320		
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu		
					325				330					335			
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val		
			340					345					350				
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile		
	355					360						365					
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu		
	370				375						380						
Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn	Ser	Gln	Pro	Glu	Lys		
385					390					395				400			
Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly	Asp	Arg	Glu	Val	Glu		
				405					410				415				
Glu	Glu	Met	Lys	Lys	His	Glu	Ser	Asn	Asn	Val	Gly	Leu	Leu	Glu	Asn		
			420					425				430					
Leu	Thr	Asn	Gly	Val	Thr	Ala	Gly	Asn	Gly	Asp	Asn	Gly	Leu	Ile	Pro		
	435					440						445					
Gln	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Asn	Gln	Gln	Phe	Pro	Asp	Asn	Glu		
	450				455						460						
Ser	Glu	Glu	Tyr	His	Arg	Ile	Cys	Glu	Leu	Val	Ser	Asp	Tyr	Lys	Glu		
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Lys																	

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<210> 381
<211> 251
<212> DNA
<213> Homo sapien
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<400> 381

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ccaatatccc	aggagaagca	ttggggagtt	gggggcaggt	gaaggaccca	ggactcacac	180
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<210> 382
<211> 3279
<212> DNA
<213> Homo sapiens
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<400> 382

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caaggatgta tgataatatg tacaaagtaa ttccaactga ggaagctcac ctgaccccta 2280
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tgaagtcctc agacctgagg ttccttagag ttcaaacaga tacagcatgg tccagagtcc 2400
cagatgtaca aaaacagggg ttcattcaca atcccatcct tagcatgaag ggtctggcat 2460
ggcccaaggc cccaagtata tcaaggcact tgggcagaac atgccaaggga atcaaatgtc 2520
atctccaggg agttattcaa gggtagagcc tttaacttgg atgtacaggc tttgagcagt 2580
gcagggtctg cgagtcaccc ttttatttga caggggatga gggaaagggg gaggatgagg 2640
aagcccccct ggggatttgg tttggtcttg tgatcaggtg gtctatgggg ctatccctac 2700
aaagaagaat ccagaaatag gggccatctg aggaatgata ctgagcccaa agagcattoa 2760
atcattgttt tatttgcctt cttttcacac cattggtgag ggagggatta ccacctggg 2820
gttatgaaga tggttgaaca cccacacatc agcaccggag atatgagatc aacagtttct 2880
tagccataga gattcacagc ccagagcagg aggacgctgc acaccatgca ggatgacatg 2940
ggggatgcgc tggggatttg tgtgaagaag caaggactgt tagagggagg ctttatagta 3000
acaagacggc ggggcaaaact ctgatttccg tgggggaatg tcatggtctt gctttactaa 3060
gttttgagac tggcaggtag tgaactcat taggctgaga acctgttggg atgcagctga 3120
ccagctgat agaggaagta gccaggtggg agcctttccc agtgggtgtg ggacatatct 3180
ggcaagattt tgtggcactc ctggttacag atactggggc agcaataaaa actgaattct 3240
gttttcagac cttaaaaaaa aaaaaaaa aaaggttt 3279

```

<210> 383

<211> 354

<212> PRT

<213> Homo sapiens

<400> 383

```

Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
          5                                10                        15

```

```

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
          20                                25                        30

```

```

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
          35                                40                        45

```

```

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
          50                                55                        60

```

```

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
          65                                70                        75                        80

```

```

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala
          85                                90                        95

```

```

Trp Ala Leu Thr Gln Pro Pro Ser Gln Ser Pro Gly Pro Gln Ser Leu
          100                               105                        110

```

```

Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr
          115                               120                        125

```

```

Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn
          130                               135                        140

```

```

Ala Leu Glu Arg Gly His Leu Val Arg Glu
          145                               150

```

<210> 384
 <211> 557
 <212> DNA
 <213> Homo sapiens

<400> 384
 ggatcctcta gagcggcgcg ctactactac taaattcgcg gccgcgtcga cgaagagag 60
 aaagatgtgt tttgttttgg actctctgtg gtcccttcca atgtgtgtgg tttccaaaca 120
 ggggaagggt ccttttttga ttgccaagt ccataacoat gagcactact ctaccatggt 180
 tctgcctcct ggccaagcag gctgggtttgc aagaatgaaa tgaatgattc tacagctagg 240
 acttaacott gaaatggaaa gtcttgcaat cccatttgcg ggatccgtct gtgcacatgc 300
 ctctgtagag agcagcattc ccaggggacct tggaaacagt tggcactgtg aggtgcttgc 360
 tccccaagac acatcctaaa aggtgttgta atggtgaaaa cgtcttctct ctttatttgc 420
 ccttcttatt tatgtgaaca actgtttgtc tttttttgta ctttttttaa actgtaaagt 480
 tcaattgtga aatgaatat catgcaata aattctgcga ttttttttcc aaagtcaaaa 540
 aaaaaaa aaaaaaa 557

<210> 385
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 385
 tccccaggtg atgtgcgagg gaagacacat ttaactatcct tgatggggct gattccttta 60
 gtttctctag cagcagatgg gttaggagga agtgaccocaa gtgggttgact cctatgtgca 120
 tctcaaagcc atctgctgtc ttogagtacg gacacatcat cactcctgca ttgttgatca 180
 aaaagtggag gtgcttttcc tcaagtaaga agcctttagc aaaagctcga atagacttag 240
 katcagacag gtccagtttc cgcaccaaca cctgctggtt cctgttgttg gtctggatct 300
 ctttggccac caattccccc ttttccacat ccggga 337

<210> 386
 <211> 300
 <212> DNA
 <213> Homo sapiens

<400> 386
 gggcccgcta ccggcccagg ccccgctcog cgagtcctcc tcccccgggtg cctgcccgcg 60
 gccgcctcgg ccagaggggt gggcgogggg ctgcctctac cggctggcgg ctgttaactca 120
 gcgaccttgg ccgaagggt ctacgaagga cccaccgacc ccagccgcgg cggcggcggc 180
 ggggactttg cccggtgtgt ggggcggagc ggactgcgtg tccgoggagc ggcagcgaag 240
 atgttagcct tgcctgcccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 387
 gggcccgagt gggcaccag ggactctttg caggcttccct tctcgggato atcaaggctg 60
 cccctctctg tgccatcatg atcagcact atgagttogg caaaagcttc ttcagagggc 120
 tgaaccagga ccggtctctg ggcggctgaa aggggcaagg aggcaaggac cccgtctctc 180
 ccaoggatgg ggagagggca ggaggagacc cagccaagt ccttttccct agcactgagg 240
 gagggggctt gtctcccttc cctcccggcg acaagctcca gggcagggct gtccctctgg 300
 ggggcccagc acttctcag acacaaattc tctctgctgc tccagtctgt ggggcatca 360
 cttaccacc ccccaagttc aagaccaa atctccagctg ccccttctgt gtttccctgt 420
 gtttctgtga gctgggcatg tctccaggaa ccaagaagcc ctacgctcgg tgtagctctc 480
 ctgacccttg ttaattcctt agtctaaa atgatgaact tcaaaaaaa aaaaaaa 537

<210> 388
 <211> 520
 <212> DNA
 <213> Homo sapiens

```
<400> 388
aggataattt ttaaaccaat caaatgaaaa aaacaaacaa acaaaaaagg aaatgtcatg 60
tgaggttaaa ccagtttgca ttccctaat gtggaaaaag taagaggact actcagcact 120
gtttgaagat tgcctcttct acagcttctg agaatttgtt tatttcaett gccagtgaa 180
ggaccccttc cccaacatgc ccagcccaac cctaagcat ggtcccttgt caccaggcaa 240
ccaggaaact gctacttggt gacctcacca gagaccagga gggtttggtt agctcacagg 300
acttccccca cccagaaga ttagcatccc ataactagact catactcaac tcaactaggg 360
tcatactcaa ttgatggtta ttagacaatt ccatttcttt ctgggtatta taaacagaaa 420
atctttcttc ttctcattac cagttaaaggc ttttggtatc tttctgttgg aatgatttct 480
atgaacttgt cttattttta tgggtgggttt ttttctggt 520
```

<210> 389
 <211> 365
 <212> DNA
 <213> Homo sapiens

```
<400> 389
cgttgcccca gtttgacaga aggaaaggcg gagcttattc aaagtctaga gggagtggag 60
gagttaaagg tggatttcag atctgcctgg ttccagcgc agtgtgcct ctgctcccc 120
aacgacttke caaatcaatct caccagcgcc ttccagctca ggcgtcctag aagcgtcttg 180
aagcctatgg ccagctgtct ttgtgttccc tctcaccgc ctgtcctcac agrtgagact 240
cccaggaaac cttcagacta ctttccctctg ccttcagcaa ggggcgttgc ccacattctc 300
tgagggtcag tggaaagaacc tagactccca ttgtctagagg tagaaagggg aaggggtgctg 360
gggag 365
```

<210> 390
 <211> 221
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> [1]... (221)
 <223> n = A,T,C or G

```
<400> 390
tgcctctcca tcttggcccc gacttctctg tcaggaaagt ggggatggac cccatctgca 60
tacacggntt ctcatgggtg bgaacatct ctgcttgogg ttccaggaag gctcttggt 120
gctctangag tctgancnga ntcgttgccc cctcttgaca naaggaaggg cggagcttat 180
tcaaagtcta gagggagtgg aggagttaag gctggatttc a 221
```

<210> 391
 <211> 325
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> [1]... (325)
 <223> n = A,T,C or G

<400> 391

```

tggagcaggt cccgaggcct ccctagagcc tggggccgac tctgtgncga tgcangcttt 60
ctctcgccgc cagcctggag ctgctcctgg catctacca caatcagnog aggcgagcag 120
tagccagggc actgctgcca acagccagtc cnnataccat catgtnaccc ggtgngctct 180
naanttgat ntccanagcc ctacccatcn tagttctgct ctcccaccgg ntaccagccc 240
caactgccag gaatcctaca gccagtaacc tgtcccgcag tctctaccta ccagtacgat 300
gagacctccg gctactacta tgacc 325

```

```

<210> 392
<211> 277
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(277)
<223> n = A,T,C or G

```

```

<400> 392
atattgttta actccttccct ttatatcttt taacattttt atggngaaag gttcacatct 60
agtctcaact nggenagngn ctctactctg agtctcttcc ccggcctggn ccagtnagna 120
antaccanga accgncatgn cttanaaen nccctggttn tgggttntc aatgactgca 180
tgcaagtgcac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtgggcgg 240
ctgaggatac agcgccgcgt cctgtgttgc tggggaa 277

```

```

<210> 393
<211> 566
<212> DNA
<213> Homo sapiens

```

```

<400> 393
actagtcacg tgtggtggaa ttgcggcccg ogtcgacgga caggtcagct gtctggctca 60
gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga tttaattcag cctaaacgtt 120
ttgccgggaa cactgcagag acaatgctgt gactttccaa ccttagccca tctgcgggca 180
gagaaggctct agtttctcca tcagcattat catgatata ggaactggcta cttggttaag 240
gaggggtcta ggagatctgt cccctttaga gacaccttac ttataatgaa gtatttggga 300
gggtggtttt caaaagtaga aatgtcctgt attccgatga tcatcctgta aacattttat 360
catttattaa tcatccctgc ctgtgtctat tatttatctc atatctctac gctggaaaat 420
ttctgctca atgtttactg tgcctttgtt ttgtctagtt tgtgttgttg aaaaaaaaaa 480
cattctctgc ctgagtttta atttttgtcc aaagttattt caatctatac aattaaaagc 540
ttttgcctat caaaaaaaaa aaaaaa 566

```

```

<210> 394
<211> 384
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(384)
<223> n = A,T,C or G

```

```

<400> 394
gaacatacat gtcccggcac ctgagctgca gtctgacatc atcgccatca cgggcctcgc 60
tgcaaattns gaccgggcca aggcctggact gctggagcgt gtgaaggagc tacaggccna 120
gcaggaggac cgggctttta ggagttctaa gctgagtgtc actgtagacc ccaaatacca 180
tcccagatt atcgggagaa agggggcagt aattacccaa atcgggttgg agcatgacgt 240
gaacatccag tttcttgata aggacgatgg gaaccagccc caggacc aa ttaccatcac 300
agggtacgaa aagaacacag aagctgccag ggtatctata ctgagaattg tgggtgaact 360

```

tgagcagatg gtttctgagg acgt

394

<210> 395

<211> 399

<212> DNA

<213> Homo sapiens

<400> 395

```
ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtrcagtat cagaagtgac 60
tctgaccttg gactccaaga cctacatcaa cagcctgggt atattagatg atgagccagt 120
tatcagaggt ttcattcttg cggaaattgt ggagtctaa gaaatcatgg cctctgaagt 180
attcacgtct tccagtaac ctgagttctc tataggttg cctaaccacg gcgaattgg 240
ccagctactt gtctgcaatt gtatcttcaa gaataccctg gccatccctt tgactgacgt 300
caagttctct ttgggaagcc tgggcattct ctractacag acctctgacc atgggacggg 360
gcagcctggg gagaccatcc aatcccaaat aaaatgcac 399
```

<210> 396

<211> 403

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(403)

<223> n = A,T,C or G

<400> 396

```
tggagttntc agtgcaaca agccataaag ctccagtagc aaattactgt ctracagaaa 60
gacattttca acttctgctc cagctgctga taaaacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttagtagat 180
actaaaaaaa gtggatgaat aatctggata tttttcttaa aaagattcct tgaacacat 240
taggaaaaatg gagggcctta tgatcagaat gctagaatta gccattgtg ctgaagcagg 300
gttttagggga gggagtgagg gataaaagaa ggaaaaaag aagagtgaga aaacctatct 360
atcaaagcag gtgctatcac tcaatgttag gccctgctct ttt 403
```

<210> 397

<211> 100

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(100)

<223> n = A,T,C or G

<400> 397

```
actagtncag tctggtgaa ttggggcgg cgtcgacctc aaanccatct ctatagcaaa 60
tccatccgg ctctgtgttg gtnacagaat gactgacaaa 100
```

<210> 398

<211> 278

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

```

<400> 398
gogggcogcgt cgacagcagt tccgccagcg ctccgccctg ggtgggggatg tgctgcacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaagag cggacttcac ctggggcgat 120
tcaactactgt gcctcgacca gtgaggagag ctggaccgac agcgaggtag actcatcatg 180
ctccgggcag cccatccacc tgtggcagtt cctcaaggag ctgctactca agccccacag 240
ctatggccgc ttcattangt ggctcaacca ggagaagg 278

```

```

<210> 399
<211> 298
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(298)
<223> n = A,T,C or G

```

```

<400> 399
acggaggtgg aggaagcgnc cctgggtagc anaggatggg tccgncatt gaccncctcn 60
ggggtgceng catggagcgc atgggcgcgg gcctggggcca cggcatggat ccgcbgggct 120
ccgagatcga gcgcattggc ctgggtcatgg accgcattggg ctccgtggag ccgcatgggct 180
ccggcattga gcgcattggc ccgctggggc tcgaccacat ggctccanc attgancgca 240
tgggccagac catggagcgc attggctctg gcgtggagcn catgggtgcc ggcattggg 298

```

```

<210> 400
<211> 548
<212> DNA
<213> Homo sapiens

```

```

<400> 400
acatcaacta cttcttcatt ttaagstatg gcagttccct tcatccctct ttcctgcctt 60
gtactgttac atgtatgaaa ttctctctc ttaccgaact ctctccacc atcacagggt 120
caaagaaaca cagctctaga aggttaagag ggcacctat gaaatgaaat ggtgatttct 180
tgagtctctt ttttccacgt ttaagggggc atggcaggac ttagagttgc gagttaagac 240
tgcagagggc tagagaatta ttctatacag gctttgaggc caccatgtc acttatcccg 300
tataccctct caccatcccc ttgtctactc tgatgcccc aagatgcaac tgggcagcta 360
gttggcccc taattctggg cctttgttgt ttgttttaat tacttgggca tccraggaag 420
ctttccagtg atctctacc atgggcccc ctctgggat caagccctc ccaggccctg 480
tcccagccc ctctgcccc agcccaccg ctbtgccttg tgctcagccc tcccatggg 540
agcagggtt 548

```

```

<210> 401
<211> 355
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(355)
<223> n = A,T,C or G

```

```

<400> 401
actgtttcca tgttatgttt ctacacattg ctacctcagt gctcctggaa acttagcttt 60
tgatgtctcc aagtagtcca ccttcattta accttttgaa actgtatcat ctttgccaag 120
taagagtggg ggccattttc agctgctttg acaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtctgaag caaagtccc atggtggcgg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnggg ttccaacca ggggaagggt 300

```

cccttttgcg ttgccaagtg ccatsaccat gagcactact ctaccatggn tctgc 355

<210> 402
 <211> 407
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1) ... (407)
 <223> n = A,T,C or G

<400> 402
 atggggcaag ctggataaag aaccaagacc cactggagta tgcctgtcttc aagaaaccca 60
 tctcacatgc ggtggcctac ataggctcaa aataaaggaa tggagaaaaa tatttcaagc 120
 aastggaaaa cagaasaaag cagggtgttg actoctactt tctgacaaaa cagactatgc 180
 gaataaagat aaaaaagaga aggacattac aaaggtggtc ctgacctttg ataaatctca 240
 ttgcttgata ccaacctggg ctgttttaat tgcctaaaac aaaaggataa ttgctgagg 300
 ttgtggagct tctccctgc agagagtccc tgaatctcca aaatttggtt gagatgtaag 360
 gntgattttg ctgacaactc cttttctgaa gttttactca tttccaa 407

<210> 403
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1) ... (303)
 <223> n = A,T,C or G

<400> 403
 cagtatctat agccnactg aaaagctagt agcaggcaag tctcaaatcc aggcaccaaa 60
 tcttaagcaa gagccctgga atgggtgaaa tgcataaagg gagtctggcc aatctacaaa 120
 tagagaacaa gacctactca gtcatgaaca aaaaggcaga caccaacatg gatctcatgg 180
 gggattggat attgttaatta tagagcagga agatgacagt gatcgtcatt tggcacaaca 240
 tottaacaa caccgaaacc cattatttac ataaacctcc attcggtaac catgttgaaa 300
 gga 303

<210> 404
 <211> 225
 <212> DNA
 <213> Homo sapiens

<400> 404
 aagtgtaact tttaaaaatt tagtggattt tgaaaattct tagaggaaag taaaggaaaa 60
 attgttaaatg cactcattta cctttacatg gtgaaagtcc tctcttgatc ctacaaacag 120
 acattttcca ctcggtgttc catagtgtt aagtgatatc gatgtgttgg gcatgtgaat 180
 ctccaagtgc ctggttaata aataaagtat ctttatttca ttcac 225

<210> 405
 <211> 334
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1) ... (334)

<223> n = A,T,C or G

<400> 405

```

gagctgttat acbgtgagtt ctactaggaa atcatcaaat cbgagggttg tctggaggac 60
ttcaatacac ctcctcccat agtgaatcag ctccagggg gtccagtcce tctcttact 120
tcaccccat cccatgccaa aggaagaccc tccctccttg gtcacagcc ttctctaggc 180
ttccagtgcc ctccaggaca gagtgggtta tgttttcagc tccatccttg ctgtgagtgt 240
ctggtgaggt tgtgcctcca gcttctgtc agtgcctcat ggacagtgtc cagcccatgt 300
cactctccac tctctcannb tggatcccac ccc

```

<210> 406

<211> 216

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(216)

<223> n = A,T,C or G

<400> 406

```

tttcatacct aatgagggag ttganatnec atnnaaccag gaaatgcctg gatctcannb 60
gaaacaaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcacttgct 120
acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180
actgccaaag aatnttcaag aaggaggact gccant

```

<210> 407

<211> 413

<212> DNA

<213> Homo sapiens

<400> 407

```

gtcgaacttg tagtatcctc tgcattcatt gaagcacaag aacttcattg cttgactcat 60
gtaaatgcaa taggattaaa aaataaattt gatatcacat ggaaacagac aaaaaatatt 120
gtacaacatt gcacccagtg tcagattcta cacttgcca ctcagggaagc aagagttaat 180
cccagaggtc tatgtctcaa tgtgttatgg caaatggatg tcatgcacgt accttcattt 240
ggaaaattgt catttgctca tgtgacagtt gatacttatt cacatttcct atgggcaacc 300
tgccagacag gagaaagtct tcccatgtta aaagacattt attatcttgt ttctctgtca 360
tgggagttcc agaaaaagtt aaaacagaca atggggcagg ttctgtagta aag

```

<210> 408

<211> 183

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(183)

<223> n = A,T,C or G

<400> 408

```

ggagctngcc ctcaattcct ccatntctat gttancatat ttaatgtctt ttgmattaa 60
tnccttaacta gttaatcctt aaagggctan ntaatcctta actagtcctt ccattgtgag 120
cattatcctt ccagtatctn ccttctnttt tacttactcc ttctggcta cccatgtact 180
ntc

```

<210> 409

<211> 250

<212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(250)
 <223> n = A,T,C or G

<400> 409
 cccacgcacg ataagctctt tctttctgta agtccctgctt ggaatcatt aaatctgacg 60
 gtgggttggg ggacctgaac aaacctcctg taattaatca gctttcagtt tctccctcta 120
 gtccctcctt caacaacata ggaggatcct ccccttcttt ctgctcagcg ccttatctag 180
 gcttccagct gcccccagga cagcgtgggc tatgtttaca ggccttcctt gctggggggg 240
 ggccntatgc 250

<210> 410
 <211> 306
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(306)
 <223> n = A,T,C or G

<400> 410
 ggctgggtttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60
 agtcttgcaa tcccatctgc aggatccgtc tgtgcacatg cctctgtaga gaggcagcatt 120
 cccagggacc ttggaaacag ttggcactgt aaggtgcttg ctccccaaga cacatcctaa 180
 aaggtgttgc aatgggtgaaa accgcttctt tctttattgc cctttcttat ttatgtgaac 240
 nactgggttg ctttttttgn atctttttta aactggaaag ttaattgng aaaatgaata 300
 tontgc 306

<210> 411
 <211> 261
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(261)
 <223> n = A,T,C or G

<400> 411
 agagataattt cttaggtnaa agttcataga gttcccatga actatattgac tggccacaca 60
 ggatcttttg catttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
 tttaaatgtc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
 aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaacctat cagttccagc 240
 cttctctcaa ggnagggcaa a 261

<210> 412
 <211> 241
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(241)

<223> n = A,T,C or G

<400> 412
 gttcaatggt acctgacatt tctacaacac cccactcacc gatgtattcg ttgcccagtg 60
 ggaacatacc agcctgaatt tggaaaaaat aattgctgtt cttgcccagg aaatactacg 120
 actgaactttg atggctccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180
 ctgggagatt tcactgggta cattgaattc ccaactacc cangcaatta ccagaccaac 240
 a 241

<210> 413

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{231}

<223> n = A,T,C or G

<400> 413
 aactcttaca atccaagtga ctcatctgtg tgcctgaacc ctttccactg tctcatctcc 60
 ctcatccaag tttctagtag cttctctttg ttgtgaaggga taatcaaacg gaacaacaaa 120
 aagtttaactc tctcattttg gaacctaaaa actctcttct tctgggtct gagggctcca 180
 agaatccttg aatcanttct cagatcattg gggacaccan accaggaacc t 231

<210> 414

<211> 234

<212> DNA

<213> Homo sapiens

<400> 414
 actgtccatg aagcactgag cagaagctgg aggcacaacg caccagacac tccaggaag 60
 gatggagctg aasacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
 gtgagccaag gagggagggt cttccttttg catgggatgg ggatgaagta aggagaggga 180
 ctggaccccc tggaagctga ttcactatgg ggggagggtg attgaagtc tcca 234

<210> 415

<211> 217

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{217}

<223> n = A,T,C or G

<400> 415
 gcataggatt aagactgagt atcttttcta cattctttta actttctaag gggcacttct 60
 caaaacacag accaggtage aaatctccac tgcctcaagg ntctcaccac cactttctca 120
 cccctagcaa tagtagaatt cagtcctact tctgaggcca gaagaatggc tcagaaaaat 180
 antggattat aaaaaatcac aattaagaaa aataatc 217

<210> 416

<211> 213

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
 <222> (1)...(213)
 <223> n = A,T,C or G

<400> 416
 atgcataatnt aaagganact gcctcgcttt tagaagacat ctggncctgct ctctgcatga 60
 ggcacagcag taaagctctt tgattcccag aatcaagaac tctccccttc agactattac 120
 cgaatgcaag gtggttaatt gaaggccact aattgatgct caaatagaag gatattgaact 180
 atattggaac agatggagtc tctactacaa aag 213

<210> 417
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...(303)
 <223> n = A,T,C or G

<400> 417
 nagtcttcag gcccatcagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60
 gtgggaaagg ctttactctg agttcaaato tccaagccca tcagagagtc cacactggag 120
 agaagccata caaatgcaat gagtgtggga agagcttcag gagggattcc cattatcaag 180
 ttcattctagt ggtccacaca ggagagaaac cctataaatg tgagatatgt ggggaagggct 240
 tcantrcaaag ttcttatctt caaatccato ngaaggnoea cagtatanen aaacctttta 300
 agt 303

<210> 418
 <211> 328
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(328)
 <223> n = A,T,C or G

<400> 418
 tttttggcgg tgggtggggca gggacggggac angagtetca ctctgttgcc caggctggag 60
 tgcacaggca tgatctcggc tcaactacaa cctcgectcc catgtccaag cgattcttgt 120
 gcctcagcct tccctgtagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
 gtatttttag tagagacagg gtttcacrat gttggccagg ctggtrtcaa actcctnacc 240
 tcagnggtca ggtcgtcttc aaactcctga cctcaagtga tctgcccacc tcagcctccc 300
 aaagtgcctan gattacaggg cgtgagcc 328

<210> 419
 <211> 389
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...(389)
 <223> n = A,T,C or G

<400> 419
 cctcctcaag acggcctgtg gtccgectcc cggcaaccaa gaagcctgca gtgccatag 60

```

acctctgagc catggactgg agcctgaaag gcagcgtaga cccctgctct gatcttgetg 120
cttgcttctt ctctgtggct ccattcatag cacagtgtgt gcactgaggg ttgtgcaggg 180
cgagcaaggc caagctggct caaagagcaa ccagtcact ctgccacggg gtgcccaggca 240
cgggttctcc agccaccaac ctcactcgct ccgcgaaatg gcacatcagt tcttctacco 300
taaaggtagg acaaaagggc atctgctttt ctgaagtcct ctgctctatc agccatcacg 360
tggcagccac tcnngctgtg tgggcggg

```

<210> 420

<211> 408

<212> DNA

<213> Homo sapiens

<400> 420

```

gttctctcta actcctgcca gaaacagctc tctcaacat gagagctgca cccctctctc 60
tggccagggg agcaagcctt agccttggct tcttgcttct gcttttcttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtgtg tgaatttggg gtttccggat ggagaccgaa 180
gtcccatgta cactttctcc actgacccca taagggaatc ctcatggcca caaggatttg 240
gccaaactcac ccagctggggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtctata aacatgaaca ggtttatatt ogaagcacag 360
acgttgaccg gactttgatg aagtgtctat acaaacctgg caagcccg 408

```

<210> 421

<211> 352

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (352)

<223> n = A, T, C or G

<400> 421

```

gtcctaaaat ctttttactg atnngcatgg ctacacaatc attgaactatt acggaggcca 60
gaggagaatg aggcctggcc tgggagccct gtgcttacta naagcacatt agattatcca 120
ttcaactgaa gaacagggtct tttttgggtc cttcttctcc accacnatac acttgcaagtc 180
ctccttcttg aagattcttt ggcagttgtc tttgtcataa cccacagggt tagaaacaag 240
ggtgcaacat gaaatttctg ttctgtagca agtgcattgc tcacaagttg gcangtctgc 300
cactccaggt ttattgggtg ttgtttctct ttgagatcca tgcatttctt gg 352

```

<210> 422

<211> 337

<212> DNA

<213> Homo sapiens

<400> 422

```

atgccaccat gctggcaatg cggcgggcgg tgggaaggct gcatatccag cccaagctgg 60
cgatgatcga cggcaaccgt tgcctgaagt tgcctatgac agccgaagcg gtggtcaagg 120
gcgatagcaa ggtgcggcgg atcgcgcgcg cgtcaactct ggccaaggct agccgtgac 180
gtgaaatggc agctgtcgaa ttgatctacc cgggttatgg catcggcggg cataagggct 240
atccgacacc ggtgcacctg gaagccttgc agcggctggg gcogacggcg attcacogac 300
gcttcttccg ccggtaoggc tggcctatga aaattat 337

```

<210> 423

<211> 310

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
 <222> (1)...(310)
 <223> n - A,T,C or G

<400> 423
 gctcaaaaat ctttttactg atatggcatg gctacacaat cattgactat tagaggccag 60
 aggagaatga ggccctggcct gggagccctg bgcctactan aagcncatta gattatccat 120
 tcaactgacag aacaggtcct ttttgggtcc ttcttctcca ccacgatata cttgcagtc 180
 tctttcttga agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240
 gtgcaacatg aaattttctg ttctgtagca gtgcatgtct cacagttgtc aagtctgccc 300
 tccgagttta 310

<210> 424
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(370)
 <223> n - A,T,C or G

<400> 424
 gctcaaaaat ctttttactg ataggcatgg ctacacaatc attgactatt agaggccaga 60
 ggagaatgag gcttggcctg ggagccctgt gctactatga agcacattag attatccatt 120
 cactgacaga acaggtcctt tttgggtcct tcttctccac cagcatatac ttgcagtcct 180
 ccttcttga gattcttttg cagttgtctt tgtcataacc cacaggtgta gaaacatcct 240
 ggttgaatct cctggcaact cctcattagg tatgaaatag catgaktgat tgcataaagt 300
 cacgaaggty gcaasgatca caacgttgcc cagganaaca ttcatgtgta taagcaggac 360
 tccgtcgaog 370

<210> 425
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n - A,T,C or G

<400> 425
 aattgctatn nttkattttg ccaactcaaa taattaccaa aaaaaaaaaa tnttaaatga 60
 taacaacnca acatcaaggn aaanansaca ggaatggntg actntgcata aatnggccga 120
 anattatcca ttatnttaag ggttgacttc aggnacagc acacagacaa acatgcccag 180
 gaggntntca ggacogctcg atgtntctng agggag 216

<210> 426
 <211> 596
 <212> DNA
 <213> Homo sapiens

<400> 426
 cttccagtga ggataaccct gttgcccggg gccgagggtt tccattaggg tctgattgat 60
 tggcagtcag tgaatggagg gtgttctgat cattccgact gccccaaggg tggctggcca 120
 gctctctgtt ttgctgagct ggcagtagga cctaatttct taattaagag tagatgggtga 180
 gctgtccttg tattttgatt aacctaatgg ccttcccagc acgactcgga ttccagctgga 240
 gacatcaagg caacttttaa tgaatgatt tgaagggcca ttaagaggca cttcccggtta 300

```

ctaggcagtt catctgcaat gataacttct tggcagctga gctggtcgga gctgtggccc 360
aaacgcacac ttggcttttg gttttgagat acaactctta atcttttagt catgcttgag 420
ggtggatggc cttttcagct ttaacccaat ttgcactgcc ttggaagtgt agccaggaga 480
atacactcat atactcgttg gcttagaggg cacagcagat gtcattggtc tactgcttga 540
gtcccgctgg tcccatccca ggacettcca tgggcgagta cctgggagcc cgtgct 596

```

<210> 427

<211> 107

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (107)

<223> n = A,T,C or G

<400> 427

```

gaagaattca agttagggtt attcaaaggg cttaacgaga atcctanacc caggmcccag 60
cccgggagca gcttanaga gctcctgttt gactggccgg ctcagng 107

```

<210> 428

<211> 38

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (38)

<223> n = A,T,C or G

<400> 428

```

gaacttcna anaagactt tattcaactat ttacatt 38

```

<210> 429

<211> 544

<212> DNA

<213> Homo sapiens

<400> 429

```

ctttgctgga cgggaataaaa gtggaagcaa gcatgacctc ctgatgaggg cgtgcattt 60
attgaagagc ggttgcagcc ctgcgggttc gattaaaatc cgagaattgt atagacggcg 120
atatccacya actcttgaag gactttctga tttatccaca atcaaatcat cggttttcag 180
tttggatggt ggtcatcac ctgtagaacc tgacttggcc gtggtcggaa tccactcgtt 240
gccttccact tcagttacac ctcaactcac atcctctcct gttggttctg tctgtcttca 300
agatactcag cccacatttg agatgcagca gccatctccc ccaattcctc ctgtccatcc 360
tgatgtgcag ttaaaaaatc tgccttttta tgatgtcctt gatgttctca tcaagcccac 420
gagtttagtt caaagcagta ttcagcgatt tcaagagaag ttttttattt ttgctttgac 480
acctcaacaa gttagagaga tatgcctatc cagggaattt ttgccagggt gtaggagaga 540
tcat 544

```

<210> 430

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (507)

<223> n = A,T,C or G

<400> 430

```

cttatcncaa tgggggtccc aaacttggct gtgcagtggg aactcggggg gaattttgaa 60
gaacactgac acccatcttc caccctgaca ctctgattta attggggtgc agtgagaca 120
gagcatcaat ttaaaaaagct gccacagaatg ttntcctggg cagcgttgtg atctttgccn 180
cttctgtgac tttatgcaat gcatcatgct atttcatacc taatgaggga gtccaggag 240
attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300
caagaaggag gactgcaagt atatcgtggt ggagaagaag gacccaazaa agacctgttc 360
tgtcagttaa tggataatct aatgtgcttc tagtaggcac agggctccc ggcaggccct 420
cattctcttc tggcctctaa tagtcaatga ttgtgtagcc atgacctatc gtaaaaagat 480
ttttgagcaa aaaaaaaaaa aaaaaaa 507

```

<210> 431

<211> 392

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 431

```

gaaaattcag aatggataaa aacaaatgaa gtacaaaata tttcagattt acatagcgat 60
aaacaagaaa gcacttatca ggaggactta csaatggag tagactctan aaccatcatc 120
tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180
aagagatggg aaacaaaatc ccaggagttt tgtgtgtgga gtccgtgggt ttccaacaga 240
catcattcca gcattctgag attagggnga ttggggatca ttctggagtt ggaatgttca 300
acaaaagtga tgttgttagg taaaatgtac aacttctgga tctatgcaga cattgaaggt 360
gcaatgagtc tggcttttac tctgctgttt ct 392

```

<210> 432

<211> 387

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(387)

<223> n = A,T,C or G

<400> 432

```

ggtatccnta cataatcaaa tatagctgta gtacatgttt toattggngt agattaccac 60
aatgcaagg caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg 120
ngtagtccaa gctctcgga gtccagccac tgnagaacat gctcccttta gattaacctc 180
gtggacnctn ttgttgnaat gtctgaactg tagngccctg tatcttgctt ctgtctgnga 240
attctgttgc ttctggggca ttcccttgng atgcagagga ccaccacaca gatgacagca 300
atctgaattg ntccaatcac agctgogatt aagacatact gaaatcgtac aggaccggga 360
acaacgtata gaacactgga gtctctt 387

```

<210> 433

<211> 281

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{281}

<223> n = A,T,C or G

<400> 433

```

ttcaactagc anagaanaact gcttcagggn gtgtaaaatg aaaggcttcc acgcagttat 60
ctgattaaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tacaotatag 120
caggcnctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180
ctcgccgtgg ctattcctcn ttgntattac accagngagg ntctctgtnt gcccactggc 240
tnnaaaaccg ntatacaata atgatagaat aggaracaca c 281

```

<210> 434

<211> 484

<212> DNA

<213> Homo sapiens

<400> 434

```

ttttaaaata agcatttagt gctcagtcce tactgagtac tctttctctc ceetctctctg 60
aatttaattc tttcaacttg caatttgcaa ggattacaca tttcactgtg atgtatattg 120
tggtgcacaa aaaaaaagt gtctttgttt aaaattactt ggttctgtga tccatcttgc 180
tttttcccca ttggaactag tcattaaacc atctctgaac tggtagaana acatctgaag 240
agctagtcta tcagcatctg acaggtgaat tggatggttc tcagaacctt tccarccaga 300
cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca taacaaaccc 360
tgcctcaate tgtcacataa aagtctgtga cttgaagttt agtcagcacc cccacaaacc 420
tttaattttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag taccatgtgc 480
ttta 484

```

<210> 435

<211> 424

<212> DNA

<213> Homo sapiens

<400> 435

```

gogcogctca gagcaggtca cttctgtcct tccacgtcct ccttcaagga agccccatgt 60
gggtagcttc caatctcgca ggtcttact cctctgcctc tataagctca aacccaccaa 120
cgatggggca agtaaacccc ctcctctgcc gacttcggaa ctggcgagag ttacagcgag 180
atgggcctgt ggggaggggg caagatagat gagggggagc ggcatggtgc ggggtgaccc 240
cttggagaga ggaaaaaagg cacaagaggg gctgccacog ccactaacgg agatggccct 300
ggtagagacc tttgggggtc tggaaacctt ggaactccca tgcctctact cccacactct 360
gctatcagaa acttaaaactt gaggaatttc tctgtttttc actcgcaata aattcagagc 420
aaac 424

```

<210> 436

<211> 567

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{667}

<223> n = A,T,C or G

<400> 436

```

accttgggaa nactctcaca atataaaggg togtagactt tactccaat tccaaaaagg 60
tcctggccct gtaatcctga aagtcttccc aaggtagcta taaaatcctt ataagggtgc 120
agcctcttct ggaattcctc tgatttcaaa gtctcactct caagtctctg aaaaaggggg 180
cagttcctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240
atgggctgcc agagtaggat aggattccag atgctgacac cttctggggg aaacagggct 300
gccaggtttg tcatagcact catcaaatgc cggtcacogt ctgtgcttgc aatataaacc 360

```



```

tggttcattgt tataggactc attcaagaat tttctatato tctttcttat atactctcca 420
agttcataat gctgctccat gcccaagctgg gtgagttggc caaatccctg tggccatgag 480
gattcccttta tggggctcagt gggaaagggtg tcaatgggac ctcggtctcc atgccgaaac 540
accaaagtca caaacttcaa ctcccttggct agtacacttc ggtctagcca gaaaaaaagc 600
agaaacaaga agccaaggct aaggcttgct gccctgcoag gaggaggggt gcagctctca 660
tggtgag                                     667

```

<210> 437

<211> 693

<212> DNA

<213> Homo sapiens

<400> 437

```

ctacgtctca accctcattt ttaggttaagg aatcttaagt ccaaagatat taagtgaactc 60
acacagccag gtaaggaaag ctggattggc acaactaggac tctaccatac cgggttttgt 120
taaagctcag gttaggaggc tgataagctt ggaagggaact tcagacagct ttttcagatc 180
ataaaagata attcttagcc catgtttctc tccagagcag acctgaatg acagcanagc 240
aggtactcct ctattttcac cctcttggct tctactctct ggcagtcaga cctgtgggag 300
gccatgggag aaagcagctc tctggatggt tgtacagatc atggactatt ctctgtggac 360
catttctcca gcttacccta ggtgtcacta ttggggggac agccagcctc tttagcttcc 420
atttgagttt ctgtctgtct ttagtagagg aaacttttgc tctcacact tcacatctga 480
acacctaaact gctgttgctc ctgaggtggg gaaagacaga tatagagctt acagtattta 540
tctattttct aggcactgag ggctgtgggg tacctgttgg tgccaaaaca gatcctgttt 600
taaggacatg ctgcttcaga gatgtctgta actatctggg ggtctgtgtg gctctttacc 660
ctgcctcatg tgcctctctg gctgaaaatg acc                                     693

```

<210> 438

<211> 360

<212> DNA

<213> Homo sapiens

<400> 438

```

ctgcttatca caatgaatgt tctcctgggc aggtttgtga tctttgccac ctctgtgact 60
ttatgcaatg catcatgcta ttccatacct aatgaggggag tccaggaga tccaaccagg 120
atgtttctac acctgtgggt tatgacaaag acaactgcca aagaatcttc aagaaggagg 180
actgcaagta tatctgggtg agaagaagg cccaaaaaag acctgtctg tcagtgaatg 240
gataatctaa tgtgcttcta gtaggcacag ggtcccaagg ccaggcctca ttctcctctg 300
goototaata gtcaataatt gtgtagecat goctatcagt aaaaagattt ttgagcaaac 360

```

<210> 439

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(431)

<223> n = A,T,C or G

<400> 439

```

gttcttnta actcctgcca gaaacagctc tctcaacat gagagctgca cccctcctcc 60
tggccagggg agcaagcctt agccttggtc tcttgtttct gttttcttcc tggctagacc 120
gaagtgtact agccaaggag ttgaagcttg tgactttggt gtttggcat ggagaccgaa 180
gtcccatgta caactttccc actgacccca taaaggaaac ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgcctatg caaacctggc agcccgctga cgcggcgcgc 420
aatttagtag t                                     431

```

```
<210> 440
<211> 523
<212> DNA
<213> Homo sapiens
```

```

<E00> 440
agagataaag cttagggtcaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatccttttg tatcttaagga ttctgagatt ttgcttgagc aggatagat aaggctgttc 120
tttaaatgtc tgaatatgaa cagatttcaa aaaaaaaccr cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccocat cagttccagc 240
cttctctcaa ggagaggcaa agaaggaga tacagtggag acatctggaa agttttctcc 300
actggaaaaa tgcctactatc tgtttctata tttctgttaa aatatactag gctacagaac 360
taaaaattaa aacctctttg tgtcccttgg tctctggaaca tttatgttcc ttttaagaa 420
caaaaaatca aacctctarag aagatattga tgtatgtaat acatatagca gctcttgaag 480
tatatatatc atagcaata agtcactctg tgagaacaag cta 523

```

```
<210> 441
<211> 430
<212> DNA
<213> Homo sapiens
```

<400> 441							
gttcctccta	actcctgcca	gaaacagctc	tcttcaacat	gagagctgca	ccctcctcc	60	
tggcagggc	agcaagcctt	agccttggct	tcttgtttct	gctttttttt	tggctagacc	120	
gaagtgtact	agccaaggag	ttgaagtttg	cgactttggt	gtttcggcat	ggagaccgaa	180	
gtcccattga	caactttccc	actgacccca	taaagggaac	ctcatggcca	caaggatttg	240	
gccaaactca	ccagctgggc	atggagcagc	attatgaact	tggagagtat	ataagaaaag	300	
gatatagaaa	attcttgaak	gagtcctata	aacatgaaca	ggtttatatt	cgaagcacag	360	
acgttagacc	gaatttgatg	agtgcctatg	caaacctggc	agcccgctcg	cggggcccg	420	
aatttagtag						480	

```
<210> 442
<211> 362
<212> DNA
<213> Homo sapiens
```

<400> 442							
ctaaggaatt	agtagtgctc	ccatcaacttg	tttggagctgt	gctattctcaa	aagattttbga	60	
tttctctggaa	tgacaatttat	attttaaactt	tggctggggga	aagagttcata	ggaccacagt	120	
cttcactttct	gatacttgta	aattaatctt	ttattgcact	tgttttgacc	attaagctat	180	
atgttttagaa	atggtcattt	tacggaaaaa	ttagaaaaat	tctgataata	gtgcagaata	240	
aatgaatttaa	tgttttcact	aatttatatt	gaactgtctaa	cgacaastcaa	aaattctttc	300	
tgattatttt	tgtttttcat	ttaccagaat	aaaaactaag	aatttaasagt	ttgattacag	360	
tc						362	

```
<210> 443
<211> 624
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(624)
<223> n = A,T,C or G
```

<400> 443
ttttttttttt gcaacacaaat atacatcaca gtgaaatgtg taatccttgc aaattgcnaag 60

```

ttgaaagaat taaattcaga ggaggggaga gaaagagtag tcagtaggga ctgagcacta 120
aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgacctttg 180
tgetggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240
cccaaacac agaaaatggg gtgaattgg ccaactttct attaacttgg ettcctgttt 300
tataaatat tgtgaataat atcacctact tcaaagggca gttatgaggc ttaaatgaac 360
taacgcctac aaaacactta aacatagata acatagggtgc aagtactatg tatctggtac 420
atggtaaaaca tcocttattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaact 480
agtacagaga gagggcactt aaaccaacta agggcctgga ggggaagggtt cctgggaaga 540
ngatgcttgt gctgggtcca aatcttggtc tactatgacc ttggcccaat tatctaaact 600
ttgtccctat ctgctaaaca gacc                                     624

```

<210> 444

<211> 425

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(425)

<223> n = A,T,C or G

<400> 444

```

gcacatcatt nntcttgcac tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggcctgt gtgtgaaccc aatgttttgc ttagaattag aacaagtaag 120
ttcattgcta tagcataaca caaaatttgc ataagtgtgt gtcagcaaat ccttgaatgc 180
tgcttaatgt gagaggttgg taaaatcctt tgtgcaacac totaactccc tgaatgtttt 240
gctgtgctgg gacctgtgca tgccagacaa ggccaagctg gctgaaagag caaccagcca 300
cctctgcaat ctgcaacctc ctgctggcag gatttgtttt tgcacctgtg gaagagccaa 360
ggaggcacca gggcataagt gagtagactt atggttcgacg cggccgcgaa tttagtagta 420
gtaga                                     425

```

<210> 445

<211> 414

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 445

```

catgtttatg nttttggatt actttgggca cctagtgttt ctaaaatcgtc tatcattctt 60
ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120
tgaaattctt tgcabgtggc agattatbgt atgtagtttc ctttaactag catataatc 180
tgggtgtgtt cagataaatg aacagcaaaa bgtgggtggaa ttaccatttg gaacattgtg 240
aatgaaaaat tgtgtctcta gattatgtaa caataacta tttcctaacc attgatcttt 300
ggatttttat aatcctactc acaaatgact aggtctctcc tcttgtattt tgaagcagtg 360
tgggtgtctg attgatataa aaaaaaaaag tcgacgcggc cgggaattta gtag 414

```

<210> 446

<211> 631

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(631)

<223> n = A,T,C or G

<400> 446

```
acaaattaga anaaagtgcg agagaacacc acataccttg tccggaacat tacaatggct 60
tctgcatgca tgggaagtgt gagcattcta tcaatatgca ggagccatct tgcaggtgtg 120
atgctgggtta tactggacaa cactgtgaaa aaaaggacta cagtgttcta taogttgttc 180
ccggtcctgt acgatttcag tatgctctaa tccgagctgt gattggacaa attcagattg 240
ctgtcactcg tgtggtggtc ctctgcatca caagggccaa actttaggta atagcattgg 300
actgagattt gtaaaacttcc caaccttcca ggaaatgcc cagaagcaac agaattcaca 360
gacagaagca aaatacaggg cactacagtt cagacaatac aacaagagcg tccacgaggt 420
taatctaaag ggagcaggtt tcacagtggc tggactaccg agagcttggg ctacacaata 480
cagtattata gacaaaagaa taagacaaga gatctacaca tgttgccttg catttgbtgt 540
aatctacacc aatgaaaaca tgtactacag ctatatttga ttatgtatgg atatatctga 600
aatagtatac attgtcttga tgttttttct g 631
```

<210> 447

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{585}

<223> n = A,T,C or G

<400> 447

```
ccttgggaaa antntcacee tataaagggt cytagacttc actccaaatt ccaaaaaggt 60
cctggccatg taatcctgaa agttttccca aggtagctat aaatccctta taagggtgca 120
gcctcttctg gaattcctct gatttcaaag tctcactctc aagttcttga aaacgagggc 180
agttcctgaa aggcaggtat agcaactgat ctccagaaag aggaactgtg tgcaccggga 240
tgggctgcca gagtaggata ggattccaga tcttgacacc ttctggggga aacagggctg 300
ccaggtttgt catagcactc atcaaagtcc ggtcaacgtc tgtgcttcga atataaacct 360
gttcattgtt ataggactca ttcaagaatt ttctatatct ctttcttata tactctccaa 420
gttcataatg ctgctccatg ccagctggg tgagttggcc aaatccctgt ggccatgagg 480
attcctttat ggggtcagtg ggaaagggtg caatgggact tgggtctcca tggcgaaaca 540
ccaaagtcaac aaacttcaac tcttggtcta gtacacttcg gtcta 585
```

<210> 448

<211> 93

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{93}

<223> n = A,T,C or G

<400> 448

```
tgtctgtggg tcattctgan nncogaactg acctgcccag ccttgccgan ggccnccat 60
ggctccctag tgccttgagc agganggggc tag 93
```

<210> 449

<211> 706

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(706)

<223> n = A,T,C or G

<400> 449

```

caaagtccat gctntgtgct ggacgctgga caggggggcaa aagcnnbtgc tctgtgggtca 60
ttctgancac cgaactgacc atgccagccc tgcogatggc cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtccctggaag gtggcctctg ngaggagcca 180
cggggacagc atcctgcaga tggtcggggc cgtcccatc gccattcagg ctgcgcgaact 240
gttgggaagg gcgatacgtg cgggcctctt cgtattacg ccagctggcg aaagggggat 300
gtgctgcaag gcgattaagt tgggtaaagc cagggttttc ccagtcncca cgttgtaaaa 360
cgacggccag tgaattgaat ttaggtgacn ctatagaaga gctatgaagt cgcattgacg 420
cgtacgtaag cttggatcct cttagagcggc cgcctactac tactaaatc gcggccgcgt 480
cgacgtggga tcenccactga gagagtgag agtgacatgt gctggacnct gtccatgaag 540
cactgagcag aagctggagg cacaacgcnc cagacactca cagctactca ggaggctgag 600
aacagggttg acctgggagg tggaggttgc aatgagctga gatcaggccn ctgcncccca 660
gcattggatg cagagtgaaa ctccatctta aaaaaaana aaaaaa 706

```

<210> 450

<211> 493

<212> DNA

<213> Homo sapiens

<400> 450

```

gagacggagt gtcactctgt tgcacaggct ggagtgacag aagacactgt ctaagaaaaa 60
acagttttta aggttaaaac aacataaaaa gaaatatcct atagtggaaa taagagagtc 120
aaatgaggct gagaaattta caaagggatc ttacagacat gtccccaata tcaactgcag 180
agcctaagta taagaacaac ctttggggag aaacctcat ttgacagtga ygtacaatto 240
caagtcaggc agtgaaatgg gtggaattta actcaaatc atctgcccag ctgaaacgca 300
agagacactg tcagagagtt aaaaagtggg ttctatccat gaggtgattc cacagtcttc 360
tcaagtcaac acatctgtga actcacagac caagttctta aacctctgtc caaactctgc 420
tacacatcag aatcacctgg agagctttac aaactcccat tgcagagggc cgacggggcc 480
gcgaatttag tag 493

```

<210> 451

<211> 501

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...{501}

<223> n = A,T,C or G

<400> 451

```

ggggcgctcc cattcgccat tcaggctgcg caactgttgg gaagggcgat cggtgogggc 60
ctcttcgcta ttacggcagg tggcgaaagg gggatgtgct gcaagggcag taagttgggt 120
aacgccaggg ttttcccagt cncgacgttg taacagcagc gccagtgaa tgaatttagg 180
tgacnctata gaagagctat gacgtcgcat gcacgcgtac gtaagcttgg atcctctaga 240
gcggcgccct actactacta aattcgcgcc cgcgtcgacg tgggatccnc actgagagag 300
tggagagtga catgtgctgg acnctgtcca tgaagcactg agcagaagct ggaggcacia 360
cgcnccagac actcacagct actcaggagg ctgagaacag gttgaacctg ggaggtggag 420
gttgcaatga gctgagatca ggccnctgcn cccagcagtg gatgacagag tgaaactcca 480
tcttaaaaaa aaaaaaaaaa a 501

```

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(51)
 <223> n = A,T,C or G

<400> 452
 agaagggtttt acenttacaa cnccttttag gatgggnntt ggggagcaag c 51

<210> 453
 <211> 317
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(317)
 <223> n = A,T,C or G

<400> 453
 tacatcttgc tttttcccca ttggaactag tcattaaccc atctctgaac tggtagasaa 60
 acatctgaag agctagtcta tcagcatctg gcaagtgaat tggatgggtc tcagaaccat 120
 ttcacccana cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca 180
 taacaaaccc tgcaccaatc tgtcacataa aagtctgtga cttagaagttt antcagcacc 240
 cccaccaaac tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataagg 300
 taccocatgc tttatta 317

<210> 454
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 454
 ttccaggttac aatcaactct cagagtgtag ttcccttcta tagatgagtc agcattaata 60
 taagccacgc cagctctctg aaggagtctt gaattctctt ctgctcactc agtagaacca 120
 agaagaccaa attctctctg atcccagctt gcaaacnaaa ttgttctctt aggtctccac 180
 ccttcttttt tcaagtgttc aaagctcttc acaatttcat gaacaaacgc t 231

<210> 455
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 455
 taccaaagag ggcataataa tcagtctcac agtaggggtc accatcctcc aagtgaaaaa 60
 cattgttccg natgggcttt ccacaggcta cacacacaaa acaggaaaca tgccaagttt 120
 gtttcaacgc attgatgact tctccaagga tcttcttttg gcctcgacca cattcagggg 180
 caaagaattt ctcatagcac agctcacaat acagggtctc tttctctct a 231

<210> 456
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 456
 ttggcaggta cctttacaaa gaagacacca taccttatgc gttattaggt ggaataatca 60
 ttccattcag tatttatggt attattcttg gagaaacctt gtctgtttac tgtaaccttt 120
 tgcactcaaa ttcctttatc aggaataact acatagccac tatttacaaa gccattggaa 180

ccctttttatt tgggtgcagct gctagtcagc cctgactga cattgccaaag t 231

<210> 457

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(231)

<223> n = A,T,C or G

<400> 457

cgagggtaccc aggggtctga aaatctctnn tttantagtc gatagcaaaa ttgttcatca 60
gcattcctta atatgatott gctataatta gatttttctc cattagagtt catcacgttt 120
tatttgattt tattagcaat ctctttcaga agaccttga gctcattag ctttgtatcc 180
agttgtctaa atcgatgctt catttctctt gaggtgtctg tggcttttgc g 231

<210> 458

<211> 231

<212> DNA

<213> Homo sapiens

<400> 458

aggtcttgggt ccccccaatt ccactccctt ctactctctc taggactggg ctggggccaag 60
agaagagggg tggttaggga agccgttgag acctgaagcc ccacctcta ccttccttca 120
acacctaac cttgggtaac agcatttga attatcattt gggatgagta gaatttccaa 180
ggctctgggt taggcatttt ggggggcccag accccaggag aagaagattc t 231

<210> 459

<211> 231

<212> DNA

<213> Homo sapiens

<400> 459

ggtaccgagg ctogctgaca cagagaaacc ccaacgcgag gaaagggaatg gccagccaca 60
ccttcgogaa acctgttggt gccaccagt cctaaccgga caggacagag agacagagca 120
gacctgcaat gttttccctc caccacagcc atcctgtccc tcatttggtc tgtgctttcc 180
actatacaca gtcacgctc caatgagaaa caagaaggag caccctccac a 231

<210> 460

<211> 231

<212> DNA

<213> Homo sapiens

<400> 460

gcagggtataa catgctgcaa caacagatgt gactaggaaac ggccgggtgac atggggaggg 60
cctatcacco tattcttggg ggetgcttct tcacagtgat catgaagcct agcagcaaat 120
cccacctccc cacacgcaca cggccagcct ggagcccaca gaagggtcct cctgcagcca 180
gtggagcttg gtcagcctc cagtccacco ctaccaggct taaggataga a 231

<210> 461

<211> 231

<212> DNA

<213> Homo sapiens

<400> 461

cgagggttga gaagctctaa tgtgcagggg agccgagaag caggcggcct agggagggct 60

```

gogtgtgctc cagaagagtg tgtgcatgcc agaggggaaa caggcgccctg tgtgtccctgg 120
gtgggggttca gtgaggagtg ggaattcggc tcagcagAAC caagccgttg ggtgaataag 180
agggggatcc catggcactg atagagccct atagtttcag agctgggaat t 231

```

<210> 462

<211> 231

<212> DNA

<213> Homo sapiens

<400> 462

```

aggtaaccctc attgtagcca tgggaaaatt gatgttcagt ggggaccagt gaattaaatg 60
gggtcatgca agtataaaaa ttaaaaaaaa aagacttcac gcccaatctc atatgatgtg 120
gaagaactgt tagagagacc aacggggtag tgggttagag atttcacag tcttacattt 180
tctagaggag gtatttaatt tcttctcact catccagtgt tgtatttagg a 231

```

<210> 463

<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

```

tactccagcc tggtagacaga gogagaccct atcaaccgcc cccaccccac caaaaaaana 60
actgagtaga cagggtgtcc ctctggcatgg taagtcttaa gtcccctccc agatctgtga 120
catttgacag gtgtcttttc ctctggacct cgggtgtccc atctgagtga yaaaaggcag 180
tggggagggtg gatcttccag tcgaagcggc atagaagccc gtgtgaaaag c 231

```

<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

```

gtactctaag attttatcta agtbgccttt totgggtggg aaagtttaac cttagtgact 60
aaggacatca catatgaaga atgtttaagt tggagggtggc aacgtgaatt gcaaacaggg 120
cctgtctcag tgaactgtgt cctgtagtc cagctactcg ggaagtctgtg tgaggccagg 180
ggtgccagcg caccagctag atgctctgta acttctaggc cccattttcc c 231

```

<210> 465

<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

```

catgttggtg tagctgtggc aatgctggct gcctctcaga cagggttaac ttcagctcct 60
gtggcaaat agcaacaaat tctgacatca tatttatggc ttctgtatct ttgttgatga 120
aggatggcac aatttttgc tgbgttcata atatactcag attagtccag ctccatcaga 180
taactggag acatgcagga cattagggta gtgtgttagc tctgtaatg a 231

```

<210> 466

<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

```

caggtaacctc tttccattgg atactgtgct agcaagcatg ctctcggggg tttttttaat 60
ggccttcgaa cagaacttgc cacataccca ggtataatag tttctascac ttgccaggga 120
cctgtgcaat caaatattgt ggagaattcc ctagtggag aagtcacaaa gactataggc 180
aataatggag ccagtorca caagatgaca accagtcgtt gtgtgcggct g 231

```


<210> 467
 <211> 311
 <212> DNA
 <213> Homo sapiens

<400> 467
 gtacaccctg gcacagtcga atctgaactg gtccggcact catctttcat gagatggatg 60
 tgggtggcttt tctccttttt catcaagaat cctcagcagg gagccagac cagcctgcac 120
 tgtgccttaa cagaaggctc tgagattcta agtgggaac atttcagtga ctgtcatgtg 180
 gcatgggtct ctgcccaagg tctgaatgag actatagcaa ggctgtctgt ggacgtcagt 240
 tgtgacctgc tgggcctccr aatagactaa caggcagtg cagttggacc caagagaaga 300
 ctgcagcaga c 311

<210> 468
 <211> 3112
 <212> DNA
 <213> Homo sapiens

<400> 468
 cattgtgttg ggagaaaaac agaggggaga tttgtgtggc tgcagccgag ggagaccagg 60
 aagatctgca tgggtgggaag gacctgatga tacagagttt gataggagac aattaaaggc 120
 tgggaaggcac tggatgcctg atgatgaagt ggactttcaa actggggcac tactgaaacg 180
 atgggatggc cagagacaca ggagatgagt tggagcaagc tcaataacaa agtggttcaa 240
 cgaggacttg gaattgcatg gagctggagc tgaagtttag cccaattggt tactagttag 300
 gtgaatgttg atgattggat gatcatttct catctctgag cctcagggtc cccatccata 360
 aactgggata caccgtatga tctataaagt gggatatagt atgactctact tcactgggtt 420
 atttgaagga tgaattgaga taatttattt cagggtgcct gaacaatgcc cagattagta 480
 catttgggtg aactgagaaa tggcataaca ccaaatttaa tatatgtcag atgttactat 540
 gattatcatt caatctcata gttttgtcat ggcccaattt atctctactt gtgcctcaac 600
 aaattgaact gttaacaaag gaatctctcg tcttgggtaa tggctgagca ccaactgagc 660
 tttccattcc agttggcttc ttgggtttgc tagctgcac actagtcac ttaataaat 720
 gaagtcttaa catttctcca gtgatttttt tatctcacct ttgaagatcc tatgttatgt 780
 gattaaataa agaacttgag aagaacaggc ttcatataac ttaaaatat gcagaagata 840
 aattttctgg atgggcaata cttatgttca caggaaatgc ttaaaatat gcagaagata 900
 attaaatggc aatggacaaa gtgaaaaact tagacttttt tttttttttt ggaagtatct 960
 ggatgttccr tagtcaacta aaggagaact gaaaaatagc agtgagttcc acataatcca 1020
 aactgtgaga ttaaggctct ttgtggggaa ggacaaagat ctgtaaattt acagtttccr 1080
 tccaaagcca acgtcgaatt ttgaacata tcaagctct tcttcaagac aaataatcta 1140
 tagtacatct ttcttatggg atgcacttat gaaaaatggc ggctgtcaac atctagtca 1200
 tttogctctc aaatgggttc ctttaagag aaggttttag atctctatat ttattctgt 1260
 ggaaggacag cattgtggct tggactttat aaggtcttta ttcaactaaa taggtgagaa 1320
 ataagaaaag ctgtgactt taccatctga ggccacacat ctgtgaaat ggagataatt 1380
 aacatcata gaaacagcaa gatgacaata taatgtctaa gtatgacat gtttttgcac 1440
 atttccagcc cttttaata tccacacaca caggaaagac aaaagggaagc acagagatcc 1500
 ctgggagaaa tggccggccg ccatcttggg tcatcgatga gcctcgccct gtgcctgggtc 1560
 cngcttgtga gggaaggaca ttagaaaatg aattgatgtg ttccttaagag gatgggcagg 1620
 aaaacagatc ctgttgtgga tatttatttg aacgggatta cagatttgaa atgaagtca 1680
 aaagttagca ttaccaatga gaggaaaaaa gacgagaaaa tcttgatggc ttcaacagac 1740
 atgcaacaaa caaaatggaa tactgtgatg acatgaggca gccaaagctgg ggaggagata 1800
 accacggggc agagggctag gattctggcc ctgctgcta aactgtgctg tcaataccaa 1860
 atcatttcat atttctaac ctaaaaacaa agctgttgtt atatctgato tctacgggtc 1920
 ctcttggggc caacattctc catatatcca gccacactca ttttcaatat ttagttccca 1980
 gatctgtact gtgacctttc tacactgtag aataacatta ctcattttgt tcaagagccc 2040
 ttogtgttgc tgcctaatat gtagctgact gtttttcta aggagtgttc tggccagggg 2100
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<210> 469

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

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<210> 470

<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

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<210> 471

<211> 812

<212> DNA

<213> Homo sapiens

<400> 471

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<210> 472

<211> 515

<212> DNA

<213> Homo sapiens

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<223> n = A, T, C or G

<400> 472

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<210> 473

<211> 5829

<212> DNA

<213> Homo sapiens

<400> 473

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<211> 1594

<212> DNA

<213> Homo sapiens

<400> 474

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<210> 475

<211> 2414
 <212> DNA
 <213> Homo sapiens

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<400> 475
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<210> 476
 <211> 3434
 <212> DNA
 <213> Homo sapiens

<400> 476

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His Tyr His Arg Asp Thr Asp Thr Arg Arg His His His Met Asp Thr
      20                      25                      30

Leu Ser His Tyr His Arg Asp Thr Arg His His Thr Val Thr Trp Thr
      35                      40                      45

His His His Thr His Glu His Thr Asp Thr Leu Pro Tyr Gly His Trp
      50                      55                      60

His Thr His Cys His Thr Val Thr Trp Thr His Leu His Thr Ile Thr
      65                      70                      75                      80

Pro Pro His Thr Leu Pro Val Asp Thr Arg Thr His Arg His Cys His
      85                      90                      95

Thr Asp Thr Gln Asn Thr Val Thr Arg Arg His His His Ala Asp Thr
      100                      105                      110

Pro Pro Leu Trp Cys Arg Leu Asn Tyr Pro Ala Gly Gly Thr Ala Val
      115                      120                      125

Ala Tyr Ser Cys Leu Ser Asp Trp Leu Ser Pro Gln
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<210> 478
<211> 143
<212> PRT
<213> Homo sapiens
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166

His Gly His Thr Ser Thr Pro Ser His His His Thr His Cys Leu Trp
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Thr Gln Gly His Thr Asp Thr Val Thr Gln Ile His Lys Thr Leu Ser
 115 120 125

His Gly Asp Ile Thr Met Gln Ile His His His Ser Gly Ala Val
 130 135 140

<210> 479

<211> 222

<212> PRT

<213> Homo sapiens

<400> 479

Met Tyr Arg His Thr Glu Thr Leu Pro His Gly Asp Thr Val Thr Gln
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Ser His Glu His Thr Gly Ile Val Thr Trp Thr Asp Thr Gln Thr Tyr
 20 25 30

Gly Glu Ile Thr Leu Thr His His His Thr Ile Thr Gly Thr Gln Thr
 35 40 45

His Gly Asp Ile Thr Thr Trp Thr His Cys His Thr Thr Thr Gly Thr
 50 55 60

Arg Asp Ile Thr Leu Ser His Gly His Thr Ile Thr His Met Asn Thr
 65 70 75 80

Pro Thr His Cys His Met Asp Thr Ala Thr His Thr Ala Thr Leu Ser
 85 90 95

His Gly His Thr Ser Ile Pro Ser His His His Thr His Cys His Val
 100 105 110

Asp Thr Arg Thr His Arg His Cys His Thr Asp Thr Gln Asn Thr Val
 115 120 125

Thr Arg Arg His His His Ala Asp Thr Pro Pro His Gly His Ser Thr
 130 135 140

Arg His Ser Ala Thr Gln Ile His His His Thr Glu Met Arg Thr His
 145 150 155 160

Cys His Thr Asp Thr Thr Thr Ser Leu Pro His Phe His Val Ser Ala
 165 170 175

Gly Gly Val Gly Pro Thr Thr Leu Gly Ser Asn Arg Glu Ile Thr Trp
 180 185 190

Thr Tyr Ser Glu Gly Lys Ile Phe Phe Tyr Phe Leu Gly Asn Gln Ala
 195 200 205

Arg Leu Cys Leu Lys Lys Arg Lys Lys Lys Gln Tyr Thr Val
 210 215 220

Met	Glu	Pro	Tyr	Arg	Gly	Asn	Glu	Gln	Pro	Ser	Gln	Glu	Gln	Gly	Val	
				5					10						15	
Cys	Cys	Leu	Trp	Gly	Leu	Gln	Ser	Leu	Pro	Gln	Gly	Ser	Tyr	Val	Thr	
			20					25					30			
Val	Gly	Phe	Leu	Val	Val	Lys	Arg	Gln	Thr	Ile	Gly	Arg	Leu	Glu	Arg	
		35					40					45				
Asp	Phe	Met	Phe	Lys	Cys	Arg	Lys	Gln	Pro	Gly	Leu	Pro	Pro	Ser	Gly	
	50					55					60					
Leu	Cys	Leu	Leu	Trp	Pro	Trp	Pro	Asn	Leu	Glu	Phe	Gly	Arg	Arg	Gln	
	65				70					75					80	
Asp	Arg	Leu	Thr	Trp	Ser	Ser	Val	Ser	Val	Ala	Gly	Val	Cys	Ala	Cys	
				85					90					95		
Arg	Ala	Arg	Pro	Gly	Trp	Leu	Gly	Glu	Gln	Pro	Ala	Thr	Ser	Ala	Gly	
			100					105					110			
Val	Arg	Leu	Glu	Gln	Val	Glu	Gln	Pro	Pro	Ala	His	Pro	Leu	Gln	Glu	
		115					120					125				
Ala	Gly	Val	Ala	Arg	Phe	Pro	Arg	Pro	Glu	Trp	Val	Pro	Pro	Asn	Gly	
	130					135					140					

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<210> 481
<211> 167
<212> PRT
<213> Homo sapiens
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Met	His	Gly	Pro	Gln	Val	Leu	Ala	Arg	Cys	Ser	Glu	Cys	Ala	Cys	Pro
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Ala	Leu	Ala	Ala	Thr	Ser	Ala	Gly	Val	Arg	Leu	Glu	Gly	Val	Asp	Arg
			20					25					30		
Pro	Pro	Thr	Leu	Pro	Ser	Gln	Gly	Ser	Gly	Trp	Pro	Cys	Ser	His	Ser
		35					40					45			
Leu	Ser	Gly	Cys	His	Leu	Met	Ala	Asp	Gly	Ala	Lys	Ala	Leu	Gly	Lys
	50					55					60				
Ala	Asp	Gly	Pro	Trp	Pro	Tyr	Leu	Phe	Val	Arg	Arg	Thr	Asp	Val	Pro

168

65		70		75		80
Cys Pro Ala Ala Ser Glu Val Gly Gly Cys Ala Pro Ser Ser Trp Arg						
	85		90			95
Ala Leu Ala Glu Val Thr Gly Cys Ser Leu Gly Pro Leu Gly Leu Ala						
	100		105			110
Gln His Ala Gln Ala Ser Val Leu Leu Cys Tyr Lys Trp Ser His						
	115		120			125
Ile Gly Glu Thr Ser Ser His Leu Arg Ser Lys Val Tyr Ala Ala Phe						
	130		135			140
Gly Gly Ser Ser Pro Cys Leu Lys Gly Leu Met Ser Leu Trp Ala Ser						
	145		150		155	160
Trp Leu Ser Arg Gly Arg Pro						
		165				

<210> 482
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 482
Met Glu Pro Tyr Arg Gly Asn Lys Lys Gln Val Gln Glu Lys Gly Val
Pro Cys Leu Trp Gly Ser Ser Pro Cys Leu Arg Cys His Met Ala Leu
Arg Ala Ser Trp Leu Pro Gly Gly Gly Pro Gln Ala Ile Leu Gly Arg
Thr Leu Cys Ser Ser Ala Glu Ser Ser Gln Asp Cys His Pro Gly Gly
Pro Ser Ile Ala Leu Ala Lys Pro Cys Arg Gly Val Trp Leu Leu Phe
Glu Pro Ala Trp Pro Pro Trp His Ala Arg Ala Pro Gly Ala Gly Thr
Leu Leu Arg Val Cys Leu Ser Cys Leu Gly Cys His Leu Cys Gly Gly
Ala Ser Gly Gly Gly Gly Pro Ala Thr Asn Leu Thr Gln Ser Arg Lys
Trp Met Ala Met Phe Pro Gln Pro Glu Trp Leu Pro Pro Asp Gly

<210> 483
 <211> 143
 <212> PRT

<213> Homo sapiens

<400> 483

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Met Glu Thr Gln Arg Gly Asn Lys Gln Arg Ala Gln Glu Gln Gly Val
      5                               10                               15

Cys Cys Leu Trp Gly Ser Ser Pro Cys Leu Gly Ser Tyr Gly Thr Ala
      20                               25                               30

Gly Phe Leu Val Ala Lys Arg Arg Thr Thr Gly Leu Leu Glu Glu Asp
      35                               40                               45

Phe Thr Phe Lys Cys Arg Lys Gln Pro Lys Leu Pro Ser Met Arg Leu
      50                               55                               60

Ser Leu Leu Trp Pro Trp Arg Asp Leu Lys Phe Val Pro Arg Gln Asp
      65                               70                               75                               80

Lys Leu Thr Arg Ser Ser Val Ser Val Ala Gly Ala Tyr Ala Cys Arg
      85                               90                               95

Ala Gly Pro Gly Trp Leu Lys Glu Gln Pro Ala Thr Ser Ala Arg Val
      100                              105                              110

Arg Leu Val Gln Ala Glu His Pro Pro Pro His Pro Leu Glu Glu Val
      115                              120                              125

Gly Met Ala Arg Phe Pro Gln Pro Glu Cys Leu Pro Pro Tyr Cys
      130                              135                              140

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<210> 484

<211> 30

<212> PRT

<213> Homo Sapien

<400> 484

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Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly Phe
  1      5      10      15

Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile
      20      25      30

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<210> 485

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 485

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31

<210> 486

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 486

gagaattctc acgctgagta tttaggcc

27

<210> 487

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 487

ccgaattct tagctgccca tcgaacgcc ttcatc

36

<210> 488

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 488

gggaagcttc ttrcccggt gcaccagctg tgc

33

<210> 489

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 489

Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala

1

5

10

15

Ser Val Ala

<210> 490

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 490

Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys

1

5

10

15

Leu Ser His Ser

20

<210> 491

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 491

Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
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 Thr Gly Phe Thr
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<210> 492

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 492

Ala Leu Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr
 1 5 10 15
 Leu Ala Ser Leu
 20

<210> 493

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 493

Tyr Thr Leu Ala Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro
 1 5 10 15
 Lys Tyr Arg Gly
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<210> 494

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 494

Leu Pro Lys Tyr Arg Gly Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser
 1 5 10 15
 Leu Met Ile Ser
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<210> 495

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 495

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Phe	Pro	Asn	Gly												
			20												

<210> 496

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 496

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Pro	Pro	Pro	Pro	Ala											
				20											

<210> 497

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 497

Leu	Leu	Pro	Pro	Pro	Pro	Ala	Leu	Cys	Gly	Ala	Ser	Ala	Cys	Asp	Val
1				5					10					15	
Ser	Val	Arg	Val												
				20											

<210> 498

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 498

Asp	Val	Ser	Val	Arg	Val	Val	Val	Gly	Glu	Pro	Thr	Glu	Ala	Arg	Val
1				5					10					15	
Val	Pro	Gly	Arg												
				20											

<210> 499

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 499

```
Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 1           5           10           15
Ser Ala Phe Leu
                20
```

<210> 500

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 500

```
Leu Asp Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met
 1           5           10           15
Gly Ser Ile Val
                20
```

<210> 501

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 501

```
Phe Met Gly Ser Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met
 1           5           10           15
Val Ser Ala Ala
                20
```

<210> 502

<211> 414

<212> DNA

<213> Homo Sapien

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 502

```
caccatggag acaggcctgc gctggctttt cctggctcgt gtgctcaaag gtgtccaatg      60
tcagtogggt gaggagtcct ggggtcgcct ggtcacgcct gggacacett tgacntcac      120
ctgtagagtt ttgggaatng acctcagtag caatgcaatg agctgggtcc gccaggctcc      180
aggggaagggg ctggaatgga tcggagccat tgataattgt ccacantacg cgacctgggc      240
gaaaggccga ttatnatntt ccaaaacctn gaccacgggt gatttgaaaa tgaccagtcc      300
gacaacccag gacaaggcca cctatttttg tggcagaatg aatactggtg atagtggttg      360
gaagaatatt tggggcccag gcaccctggt caccgtntcc tcagggaac ctaa      414
```

<210> 503

<211> 379

<212> DNA

<213> Homo Sapiens

<220>

<221> misc_feature

<222> (1) ... (379)

<223> n = A,T,C or G

<400> 503

atnagatggt	gatttggtcaa	agggtgtccag	tgtcagtcgg	tggaggagtc	cggggggtgc	60
ctggtcargc	ctgggacacc	cctgacactc	acctgcaccg	tntctggatt	ngacatcagt	120
agctatggag	tgagctgggt	cggccaggct	ccagggaagg	ggctgggata	catcggatca	180
ctagtagtag	tggtagattt	tacgogagct	gggcgaaagg	ccgattcacc	atttcacaaa	240
cctngaccac	ggtggatttg	aaaatcacc	gtttgacaa	cgaggacacg	gccaactatt	300
tntgtgccag	aggggggttt	aattataaag	acatttgagg	cccaggcacc	ctggtcaccg	360
tntccttagg	gcaacctaa					379

<210> 504

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 504

Gly	Phe	Thr	Asn	Tyr	Thr	Asp	Phe	Glu	Asp	Ser	Pro	Tyr	Phe	Lys	Glu
1				5				10						15	
Asn	Ser	Ala													

<210> 505

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 505

Lys	Glu	Asn	Ser	Ala	Phe	Pro	Pro	Phe	Cys	Cys	Asn	Asp	Asn	Val	Thr
1				5				10						15	
Asn	Thr	Ala	Asn												
				20											

<210> 506

<211> 407

<212> DNA

<213> Homo Sapien

<400> 506

atggagacag	gcctgcgtg	gcttctctctg	gtgctgcgc	tcaaagggtg	ccagtgtcag	60
tgcctggagg	agtcggggg	tgccttggtc	acgcctggga	cacccctgac	actcactgc	120
accgtctctg	gattctccct	cagtagcaat	gcaatgatct	gggtccggca	ggctccaggg	180
aaggggctgg	aatacatcgg	atacattagt	tatgggtggt	gcgcatacta	cgcgagctgg	240
gtgaaaggcc	gattcaccat	ctccaaaacc	tgcaccacgg	tggatctgag	aatgaccagt	300
ctgacaaccg	aggacacggc	cacctatttc	ctgtccagaa	atagtgattt	tagtggatatg	360
ctgtggggcc	caggcaccct	ggtcaccgtc	tcctcagggc	aacctaa		407

<210> 507
 <211> 422
 <212> DNA
 <213> Homo Sapien

<400> 507
 atggagacag gcttcgctg gttctctctg gtcgctgtgc tcaagggtgt cagtggtcag 60
 tcggtggagg agtccggggg tgccttggtc aggcctggga cccctctgac actcactgt 120
 acagtctctg gattctcct cagcaactac gacctgaact ggtccgcca ggtccagg 180
 aaggggtctg aatggatcgg gatcattaat tatgttggtt ggacggacta cgcgaactgg 240
 gcaaaaggcc ggttcacat ctccaaaacc tcgaccaccg tggatctcaa gatcgccagt 300
 ccgacaaccg aggcacgggc cactcttttc tctgcccagag ggtggaggtg ccatgagttt 360
 ggtccgtgtt tgcgcattct gggcccgagg accctggtca cgtctctt agggcaacct 420
 aa 422

<210> 508
 <211> 411
 <212> DNA
 <213> Homo Sapiens

<220>
 <221> misc_feature
 <222> (1)...(411)
 <223> n = A, T, C or G

<400> 508
 atggagacag gcttcgctgg cttctctctg tgcgtgtgtt caaagggtgt cagtgtcagt 60
 cgggtggagg gtccgggggt cgccttggtc cgcctgggac acccctgaca ctccactgca 120
 cagtctcttg aatcgacctc agtagctact gcatgagctg ggtccgcccag gctccaggga 180
 aggggtctgg atggatcgga atcatttggt ctccttggtg cacatactac gcgagggtgg 240
 cgaaggcccg attcaccatc tccaaaacct cgaaccagggt gcatntgaaa atcncagtc 300
 cgacaacoga ggacacgggc acctatttct gtgccagaga tcttcgggat ggtagtagta 360
 ctggttatca taaaatctgg ggcccaggca ccttggtcac cgtctccttg g 411

<210> 509
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 509
 Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 1 5 10 15

<210> 510
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 510
 Pro Glu Tyr Asn Arg Pro Leu Leu Ala Asn Asp Leu Met Leu Ile
 1 5 10 15

<210> 511
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 511

Tyr	His	Pro	Ser	Met	Phe	Cys	Ala	Gly	Gly	Gly	Gln	Asp	Gln	Lys
1				5				10					15	

<210> 512
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 512

Asp	Ser	Gly	Gly	Pro	Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu
1				5				10					15	

<210> 513
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 513

Ala	Pro	Cys	Gly	Gln	Val	Gly	Val	Pro	Asx	Val	Tyr	Thr	Asn	Leu
1				5				10					15	

<210> 514
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 514

Leu	Cys	Lys	Phe	Thr	Glu	Trp	Ile	Glu	Lys	Thr	Val	Gln	Ala	Ser
1				5				10					15	

<210> 515
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 515
 Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg
 1 5 10 15

<210> 516
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 516
 Val Ser Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln
 1 5 10 15

<210> 517
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 517
 Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met
 1 5 10 15

<210> 518
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 518
 Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 1 5 10 15

<210> 519
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 519
 Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg Asn Tyr Asp Glu Gly Cys
 1 5 10 15
 Gly

<210> 520
 <211> 25
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Made in a lab

<400> 520

Val	Gly	Glu	Gly	Leu	Tyr	Gln	Gly	Val	Pro	Arg	Ala	Glu	Pro	Gly	Thr
1				5				10						15	
Glu	Ala	Arg	Arg	His	Tyr	Asp	Glu	Gly							
			20				25								

<210> 521

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 521

Ala	Pro	Phe	Pro	Asn	Gly	His	Val	Gly	Ala	Gly	Gly	Ser	Gly	Leu	Leu
1				5				10						15	
Pro	Pro	Pro	Pro	Ala											
				20											

<210> 522

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 522

Leu	Leu	Val	Val	Pro	Ala	Ile	Lys	Lys	Asp	Tyr	Gly	Ser	Gln	Glu	Asp
1				5				10						15	
Phe	Thr	Gln	Val												
			20												

<210> 523

<211> 254

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<220>

<221> VARIANT

<222> (1)...(254)

<223> Xaa = any amino acid

<400> 523

Met	Ala	Thr	Ala	Gly	Asn	Pro	Trp	Gly	Trp	Phe	Leu	Gly	Tyr	Leu	Ile
1				5				10						15	
Leu	Gly	Val	Ala	Gly	Ser	Leu	Val	Ser	Gly	Ser	Cys	Ser	Gln	Ile	Ile
			20				25					30			
Asn	Gly	Glu	Asp	Cys	Ser	Pro	His	Ser	Gln	Pro	Trp	Gln	Ala	Ala	Leu
		35					40								45

Val Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln
 50 55 60
 Trp Val Leu Ser Ala Thr His Cys Phe Gln Asn Ser Tyr Thr Ile Gly
 65 70 75 80
 Leu Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met
 85 90 95
 Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu
 100 105 110
 Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu
 115 120 125
 Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala
 130 135 140
 Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg
 145 150 155 160
 Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu
 165 170 175
 Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys
 180 185 190
 Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser Gly
 195 200 205
 Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly
 210 215 220
 Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu
 225 230 235 240
 Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
 245 250

<210> 524

<211> 765

<212> DNA

<213> Homo sapien

<400> 524

atggccacag	caggaaatcc	ctggggctgg	ttcctgggggt	acctcatcct	tggtgtcgca	160
ggatcgctcg	tctctggtag	ctgcagccaa	atcataaacg	gogaggaactg	cagcccgcac	120
tgcagccct	ggcagggcggc	actgggtcatg	gaaaaagaaat	tggtctgctc	gggcgtcctg	180
gtgcctccgc	agtgggtgct	gtcagccgca	caatggttcc	agaactccta	caccatcggg	240
ctgggcttgc	acagtcttga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	300
ctctccgtac	ggcaccacaga	gtacaacaga	cccttgctcg	ctaaccgacct	catgctcatc	360
aagttggaag	aatccgtgtc	cgagtctgac	accatccgga	gcatacagcat	tgcttcgcag	420
tgcctacag	cggggaactc	ttgcctcggt	tctgggtggg	gtctgctggc	gaacggcaga	480
atgcctacag	tgtgtcagtg	cgtgaacgtg	tgggtgggtg	ctgaggaggt	ctgcagtaag	540
ctctatgacc	cgtgttacca	ccccagcatg	ttctgcgccc	gcggagggca	agaccagaag	600
gactcctgca	acggtgactc	tggggggccc	ctgatctgca	acgggtactt	gcaggggcctt	660
gtgtcttttcg	gaaaagcccc	gtgtggccaa	gttggcgtgc	caggtgtcta	caccaactctc	720
tgcgaattca	ctgagtggat	agagaaaacc	gtccaggcca	gttaa		765

<210> 525

<211> 254

<212> PRT

<213> Homo sapien

<400> 525

Met Ala Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile
 1 5 10 15
 Leu Gly Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile
 20 25 30
 Asn Gly Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu

	35		40		45										
Val	Met	Glu	Asn	Glu	Leu	Phe	Cys	Ser	Gly	Val	Leu	Val	His	Pro	Gln
	50					55					60				
Trp	Val	Leu	Ser	Ala	Ala	His	Cys	Phe	Gln	Asn	Ser	Tyr	Thr	Ile	Gly
65					70					75				80	
Leu	Gly	Leu	His	Ser	Leu	Glu	Ala	Asp	Gln	Glu	Pro	Gly	Ser	Gln	Met
			85						90				95		
Val	Glu	Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Pro	Leu
			100					105					110		
Leu	Ala	Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val	Ser	Glu
		115					120					125			
Ser	Asp	Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr	Ala
	130				135						140				
Gly	Asn	Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Gly	Arg
145				150						155				160	
Met	Pro	Thr	Val	Leu	Gln	Cys	Val	Asn	Val	Ser	Val	Val	Ser	Glu	Glu
			165					170					175		
Val	Cys	Ser	Lys	Leu	Tyr	Asp	Pro	Leu	Tyr	His	Pro	Ser	Met	Phe	Cys
		180					185					190			
Ala	Gly	Gly	Gly	Gln	Asp	Gln	Lys	Asp	Ser	Cys	Asn	Gly	Asp	Ser	Gly
	195					200					205				
Gly	Pro	Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu	Val	Ser	Phe	Gly
	210				215						220				
Lys	Ala	Pro	Cys	Gly	Gln	Val	Gly	Val	Pro	Gly	Val	Tyr	Thr	Asn	Leu
225				230				235						240	
Cys	Lys	Phe	Thr	Glu	Trp	Ile	Glu	Lys	Thr	Val	Gln	Ala	Ser		
			245				250								

<210> 526

<211> 963

<212> DNA

<213> Homo sapiens

<400> 526

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atgagttcct gcaacttcac acatgccacc tttgtgctta ttggtatccc aggattagag 60
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aactgcacgc tggctctcat cgtaaggacg gaacgcagcc tgcacgctcc gatgtacctc 180
tttctctgca tgccttgacg cactgacctg gccttatcca catccaccat gacctagatc 240
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cgcttatgtg ccactctgca ccactgcgc catgctgcag tgcctcaaca tacagtaaca 420
gcccagattg gcactgtgga tgtggtccgc ggatccctct ttttttccc actgcctctg 480
ctgatcaagc ggctggcctt ctgccactcc aatgtctctc cgcactctta ttgtgtccac 540
caggatgtaa tgaagttggc ctatgcagac actttgccc atgtggtata tggctctact 600
gccattctgc tggcatggg ogtggaogta atgttcatct ccttgtctta ttttctgata 660
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cacgcttttg gaacagcct tcatccatt gtgcgtgttg tcatgggtga catctacctg 840
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tga

```

<210> 527

<211> 320

<212> PRT

<213> Homo sapiens

<400> 527

Met Ser Ser Cys Asn Phe Thr His Ala Thr Phe Val Leu Ile Gly Ile
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 Pro Gly Leu Glu Lys Ala His Phe Trp Val Gly Phe Pro Leu Leu Ser
 20 25 30
 Met Tyr Val Val Ala Met Phe Gly Asn Cys Ile Val Val Phe Ile Val
 35 40 45
 Arg Thr Glu Arg Ser Leu His Ala Pro Met Tyr Leu Phe Leu Cys Met
 50 55 60
 Leu Ala Ala Ile Asp Leu Ala Leu Ser Thr Ser Thr Met Pro Lys Ile
 65 70 75 80
 Leu Ala Leu Phe Trp Phe Asp Ser Arg Glu Ile Ser Phe Glu Ala Cys
 85 90 95
 Leu Thr Gln Met Phe Phe Ile His Ala Leu Ser Ala Ile Glu Ser Thr
 100 105 110
 Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro
 115 120 125
 Leu Arg His Ala Ala Val Leu Asn Asn Thr Val Thr Ala Gln Ile Gly
 130 135 140
 Ile Val Ala Val Val Arg Gly Ser Leu Phe Phe Phe Pro Leu Pro Leu
 145 150 155 160
 Leu Ile Lys Arg Leu Ala Phe Cys His Ser Asn Val Leu Ser His Ser
 165 170 175
 Tyr Cys Val His Gln Asp Val Met Lys Leu Ala Tyr Ala Asp Thr Leu
 180 185 190
 Pro Asn Val Val Tyr Gly Leu Thr Ala Ile Leu Leu Val Met Gly Val
 195 200 205
 Asp Val Met Phe Ile Ser Leu Ser Tyr Phe Leu Ile Ile Arg Thr Val
 210 215 220
 Leu Gln Leu Pro Ser Lys Ser Glu Arg Ala Lys Ala Phe Gly Thr Cys
 225 230 235 240
 Val Ser His Ile Gly Val Val Leu Ala Phe Tyr Val Pro Leu Ile Gly
 245 250 255
 Leu Ser Val Val His Arg Phe Gly Asn Ser Leu His Pro Ile Val Arg
 260 265 270
 Val Val Met Gly Asp Ile Tyr Leu Leu Leu Pro Pro Val Ile Asn Pro
 275 280 285
 Ile Ile Tyr Gly Ala Lys Thr Lys Gln Ile Arg Thr Arg Val Leu Ala
 290 295 300
 Met Phe Lys Ile Ser Cys Asp Lys Asp Leu Gln Ala Val Gly Gly Lys

305

310

315

320

<210> 528
 <211> 20
 <212> DNA
 <213> Homo Sapien

<400> 528
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20

<210> 529
 <211> 20
 <212> DNA
 <213> Homo Sapien

<400> 529
 atcacctatg tgcgcctct

20

<210> 530
 <211> 1852
 <212> DNA
 <213> Homo sapiens

<400> 530
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 aacaccacct atgacaagcc cacagccaac ataatactaa atggggaaaa gttagaagca 120
 ttctctctga gaactgcaac aataaatata aggatgctgg attttgtcaa atgccltttc 180
 tgtgtctgtt gagatgctta tgtgactttg cttttaattc tgtttatgtg attatcacat 240
 ttatctgactt gcttgtgtta gaccggaaga gctggggtgt ttctcaggag ccaccgtgtg 300
 ctgcygcagc ttccgggataa cttgaggtg catcactggg gaagaaacac aytctgtccc 360
 gtggogctga tggctgagga cagagcttca gctgtggcttc tctgcgactg gcttctctgg 420
 ggagtctctc cttcatagtt catccatag gctccagagg aaaattatat tattttgtta 480
 tggatgaaga gtattacgtt gtgcagatat actgcagtgt cttcatctct tgatgtgtga 540
 ttgggttaggt tccaccatgt tgcgcagat gacatgattt cagtacctgt gtctgggtga 600
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 ctgctaactg gtatacatga gcaaaaacag caagtgggtga aatttttaat caagaaaaaa 1440
 gogaatttaa atgcgctgga tagatatgga agaactgtct tcatacttgc tgtatgttgt 1500
 ggatcagcaa gtatagtcag cctctactt gagcaaaatg ttgatgtatc ttctcaggat 1560
 ctggaaagac ggcagagag tatgtgttt ctagtcatra tcatgttaatt tgcagttac 1620
 ttcttgacta caaagaaaaa cagatgttaa aaatctcttc tgaaaacagc aatccagaac 1680
 aagacttaaa gctgacatca gaggaagagt cacaaaggct taaaggaagt gaaaacagcc 1740
 agccagagct agaagattta tggctattga agaagaatga agaacagga agtaactcat 1800
 tgggattccc agaaaacctg actaacggtg ccgctgctgg caatggtgat ga 1862

<210> 531
 <211> 879

<212> DNA

<213> Homo sapiens

<400> 531

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tgcaagtggg gctgccactg cttccctctg tgcaggggga gggcaagag caacgtgggc 180
gcttggggag actacgatga cagcgctttr atggatccca ggtaccacgt ccatggagaa 240
gatctggaca agctccacag agctgcttgg tggggtaaaag tcccagaaa ggtctctate 300
gtcatgctca gggacacgga tgtgaacaag agggacaagc aaaagaggac tgctctarat 360
ctggcctctg ccaatgggaa ttcagaagta gtaaaactcg tgctggacag acgatgtcaa 420
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gatccaaaga	ctgatgagtt	aatacaaa	aaatccggg	agaaatttgc	ccactgcacc	3840
gtgctaacca	ctgcacacag	attgaacacc	attattgaca	gcgacaagat	aatggtttta	3900


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<210> 537

<211> 1228

<212> PRT

<213> Homo sapiens

<400> 537

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Met Leu Pro Val Tyr Gln Glu Val Lys Pro Asn Pro Leu Gln Asp Ala
      5                      10                      15

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Asn Leu Cys Ser Arg Val Phe Phe Trp Trp Leu Asn Pro Leu Phe Lys
      20                      25                      30

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Ile Gly His Lys Arg Arg Leu Glu Glu Asp Asp Met Tyr Ser Val Leu
      35                      40                      45

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Pro Glu Asp Arg Ser Gln His Leu Gly Glu Glu Leu Gln Gly Phe Trp
      50                      55                      60

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Asp Lys Glu Val Leu Arg Ala Glu Asn Asp Ala Gln Lys Pro Ser Leu

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65	70	75	80
Thr Arg Ala Ile Ile Lys Cys Tyr Trp Lys Ser Tyr Leu Val Leu Gly	85	90	95
Ile Phe Thr Leu Ile Glu Glu Ser Ala Lys Val Ile Gln Pro Ile Phe	100	105	110
Leu Gly Lys Ile Ile Asn Tyr Phe Glu Asn Tyr Asp Pro Met Asp Ser	115	120	125
Val Ala Leu Asn Thr Ala Tyr Ala Tyr Ala Thr Val Leu Thr Phe Cys	130	135	140
Thr Leu Ile Leu Ala Ile Leu His His Leu Tyr Phe Tyr His Val Gln	145	150	155
Cys Ala Gly Met Arg Leu Arg Val Ala Met Cys His Met Ile Tyr Arg	165	170	175
Lys Ala Leu Arg Leu Ser Asn Met Ala Met Gly Lys Thr Thr Thr Gly	180	185	190
Gln Ile Val Asn Leu Leu Ser Asn Asp Val Asn Lys Phe Asp Gln Val	195	200	205
Thr Val Phe Leu His Phe Leu Trp Ala Gly Pro Leu Gln Ala Ile Ala	210	215	220
Val Thr Ala Leu Leu Trp Met Glu Ile Gly Ile Ser Cys Leu Ala Gly	225	230	235
Met Ala Val Leu Ile Ile Leu Leu Pro Leu Gln Ser Cys Phe Gly Lys	245	250	255
Leu Phe Ser Ser Leu Arg Ser Lys Thr Ala Thr Phe Thr Asp Ala Arg	260	265	270
Ile Arg Thr Met Asn Glu Val Ile Thr Gly Ile Arg Ile Ile Lys Met	275	280	285
Tyr Ala Trp Glu Lys Ser Phe Ser Asn Leu Ile Thr Asn Leu Arg Lys	290	295	300
Lys Glu Ile Ser Lys Ile Leu Arg Ser Ser Cys Leu Arg Gly Met Asn	305	310	315
Leu Ala Ser Phe Phe Ser Ala Ser Lys Ile Ile Val Phe Val Thr Phe	325	330	335
Thr Thr Tyr Val Leu Leu Gly Ser Val Ile Thr Ala Ser Arg Val Phe	340	345	350
Val Ala Val Thr Leu Tyr Gly Ala Val Arg Leu Thr Val Thr Leu Phe	355	360	365
Phe Pro Ser Ala Ile Glu Arg Val Ser Glu Ala Ile Val Ser Ile Arg	370	375	380

Arg Ile Gln Thr Phe Leu Leu Leu Asp Glu Ile Ser Gln Arg Asn Arg
 385 390 395 400
 Gln Leu Pro Ser Asp Gly Lys Lys Met Val His Val Gln Asp Phe Thr
 405 410 415
 Ala Phe Trp Asp Lys Ala Ser Glu Thr Pro Thr Leu Gln Gly Leu Ser
 420 425 430
 Phe Thr Val Arg Pro Gly Glu Leu Leu Ala Val Val Gly Pro Val Gly
 435 440 445
 Ala Gly Lys Ser Ser Leu Leu Ser Ala Val Leu Gly Glu Leu Ala Pro
 450 455 460
 Ser His Gly Leu Val Ser Val His Gly Arg Ile Ala Tyr Val Ser Gln
 465 470 475 480
 Gln Pro Trp Val Phe Ser Gly Thr Leu Arg Ser Asn Ile Leu Phe Gly
 485 490 495
 Lys Lys Tyr Glu Lys Glu Arg Tyr Glu Lys Val Ile Lys Ala Cys Ala
 500 505 510
 Leu Lys Lys Asp Leu Gln Leu Leu Glu Asp Gly Asp Leu Thr Val Ile
 515 520 525
 Gly Asp Arg Gly Thr Thr Leu Ser Gly Gly Gln Lys Ala Arg Val Asn
 530 535 540
 Leu Ala Arg Ala Val Tyr Gln Asp Ala Asp Ile Tyr Leu Leu Asp Asp
 545 550 555 560
 Pro Leu Ser Ala Val Asp Ala Glu Val Ser Arg His Leu Phe Glu Leu
 565 570 575
 Cys Ile Cys Gln Ile Leu His Glu Lys Ile Thr Ile Leu Val Thr His
 580 585 590
 Gln Leu Gln Tyr Leu Lys Ala Ala Ser Gln Ile Leu Ile Leu Lys Asp
 595 600 605
 Gly Lys Met Val Gln Lys Gly Thr Tyr Thr Glu Phe Leu Lys Ser Gly
 610 615 620
 Ile Asp Phe Gly Ser Leu Leu Lys Lys Asp Asn Glu Glu Ser Glu Gln
 625 630 635 640
 Pro Pro Val Pro Gly Thr Pro Thr Leu Arg Asn Arg Thr Phe Ser Glu
 645 650 655
 Ser Ser Val Trp Ser Gln Gln Ser Ser Arg Pro Ser Leu Lys Asp Gly
 660 665 670
 Ala Leu Glu Ser Gln Asp Thr Glu Asn Val Pro Val Thr Leu Ser Glu
 675 680 685

Glu Asn Arg Ser Glu Gly Lys Val Gly Phe Gln Ala Tyr Lys Asn Tyr
 690 695 700
 Phe Arg Ala Gly Ala His Trp Ile Val Phe Ile Phe Leu Ile Leu Leu
 705 710 715 720
 Asn Thr Ala Ala Gln Val Ala Tyr Val Leu Gln Asp Trp Trp Leu Ser
 725 730 735
 Tyr Trp Ala Asn Lys Gln Ser Met Leu Asn Val Thr Val Asn Gly Gly
 740 745 750
 Gly Asn Val Thr Glu Lys Leu Asp Leu Asn Trp Tyr Leu Gly Ile Tyr
 755 760 765
 Ser Gly Leu Thr Val Ala Thr Val Leu Phe Gly Ile Ala Arg Ser Leu
 770 775 780
 Leu Val Phe Tyr Val Leu Val Asn Ser Ser Gln Thr Leu His Asn Lys
 785 790 795 800
 Met Phe Glu Ser Ile Leu Lys Ala Pro Val Leu Phe Phe Asp Arg Asn
 805 810 815
 Pro Ile Gly Arg Ile Leu Asn Arg Phe Ser Lys Asp Ile Gly His Leu
 820 825 830
 Asp Asp Leu Leu Pro Leu Thr Phe Leu Asp Phe Ile Gln Thr Leu Leu
 835 840 845
 Gln Val Val Gly Val Val Ser Val Ala Val Ala Val Ile Pro Trp Ile
 850 855 860
 Ala Ile Pro Leu Val Pro Leu Gly Ile Ile Phe Ile Phe Leu Arg Arg
 865 870 875 880
 Tyr Phe Leu Glu Thr Ser Arg Asp Val Lys Arg Leu Glu Ser Thr Thr
 885 890 895
 Arg Ser Pro Val Phe Ser His Leu Ser Ser Ser Leu Gln Gly Leu Trp
 900 905 910
 Thr Ile Arg Ala Tyr Lys Ala Glu Glu Arg Cys Gln Glu Leu Phe Asp
 915 920 925
 Ala His Gln Asp Leu His Ser Glu Ala Trp Phe Leu Phe Leu Thr Thr
 930 935 940
 Ser Arg Trp Phe Ala Val Arg Leu Asp Ala Ile Cys Ala Met Phe Val
 945 950 955 960
 Ile Ile Val Ala Phe Gly Ser Leu Ile Leu Ala Lys Thr Leu Asp Ala
 965 970 975
 Gly Gln Val Gly Leu Ala Leu Ser Tyr Ala Leu Thr Leu Met Gly Met
 980 985 990
 Phe Gln Trp Cys Val Arg Gln Ser Ala Glu Val Glu Asn Met Met Ile

995	1000	1005
Ser Val Glu Arg Val Ile Glu Tyr Thr Asp Leu Glu Lys Glu Ala Pro 1010	1015	1020
Trp Glu Tyr Gln Lys Arg Pro Pro Pro Ala Trp Pro His Glu Gly Val 1025	1030	1035 1040
Ile Ile Phe Asp Asn Val Asn Phe Met Tyr Ser Pro Gly Gly Pro Leu 1045	1050	1055
Val Leu Lys His Leu Thr Ala Leu Ile Lys Ser Gln Glu Lys Val Gly 1060	1065	1070
Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser Leu Ile Ser Ala Leu 1075	1080	1085
Phe Arg Leu Ser Glu Pro Glu Gly Lys Ile Trp Ile Asp Lys Ile Leu 1090	1095	1100
Thr Thr Glu Ile Gly Leu His Asp Leu Arg Lys Lys Met Ser Ile Ile 1105	1110	1115 1120
Pro Gln Glu Pro Val Leu Phe Thr Gly Thr Met Arg Lys Asn Leu Asp 1125	1130	1135
Pro Phe Asn Glu His Thr Asp Glu Glu Leu Trp Asn Ala Leu Gln Glu 1140	1145	1150
Val Gln Leu Lys Glu Thr Ile Glu Asp Leu Pro Gly Lys Met Asp Thr 1155	1160	1165
Glu Leu Ala Glu Ser Gly Ser Asn Phe Ser Val Gly Gln Arg Gln Leu 1170	1175	1180
Val Cys Leu Ala Arg Ala Ile Leu Arg Lys Asn Gln Ile Leu Ile Ile 1185	1190	1195 1200
Asp Glu Ala Thr Ala Asn Val Asp Pro Arg Thr Asp Glu Leu Ile Gln 1205	1210	1215
Lys Lys Ser Gly Arg Asn Leu Pro Thr Ala Pro Cys 1220	1225	
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Gln Lys Pro Ser Leu Thr Arg Ala Ile Ile Lys Cys Tyr Trp Lys Ser 35	40	45

Tyr Leu Val Leu Gly Ile Phe Thr Leu Ile Glu Glu Ser Ala Lys Val
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 Ile Gln Pro Ile Phe Leu Gly Lys Ile Ile Asn Tyr Phe Glu Asn Tyr
 65 70 75 80
 Asp Pro Met Asp Ser Val Ala Leu Asn Thr Ala Tyr Ala Tyr Ala Thr
 85 90 95
 Val Leu Thr Phe Cys Thr Leu Ile Leu Ala Ile Leu His His Leu Tyr
 100 105 110
 Phe Tyr His Val Gln Cys Ala Gly Met Arg Leu Arg Val Ala Met Cys
 115 120 125
 His Met Ile Tyr Arg Lys Ala Leu Arg Leu Ser Asn Met Ala Met Gly
 130 135 140
 Lys Thr Thr Thr Gly Gln Ile Val Asn Leu Leu Ser Asn Asp Val Asn
 145 150 155 160
 Lys Phe Asp Gln Val Thr Val Phe Leu His Phe Leu Trp Ala Gly Pro
 165 170 175
 Leu Gln Ala Ile Ala Val Thr Ala Leu Leu Trp Met Glu Ile Gly Ile
 180 185 190
 Ser Cys Leu Ala Gly Met Ala Val Leu Ile Ile Leu Leu Pro Leu Gln
 195 200 205
 Ser Cys Phe Gly Lys Leu Phe Ser Ser Leu Arg Ser Lys Thr Ala Thr
 210 215 220
 Phe Thr Asp Ala Arg Ile Arg Thr Met Asn Glu Val Ile Thr Gly Ile
 225 230 235 240
 Arg Ile Ile Lys Met Tyr Ala Trp Glu Lys Ser Phe Ser Asn Leu Ile
 245 250 255
 Thr Asn Leu Arg Lys Lys Glu Ile Ser Lys Ile Leu Arg Ser Ser Cys
 260 265 270
 Leu Arg Gly Met Asn Leu Ala Ser Phe Phe Ser Ala Ser Lys Ile Ile
 275 280 285
 Val Phe Val Thr Phe Thr Thr Tyr Val Leu Leu Gly Ser Val Ile Thr
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 Ala Ser Arg Val Phe Val Ala Val Thr Leu Tyr Gly Ala Val Arg Leu
 305 310 315 320
 Thr Val Thr Leu Phe Phe Pro Ser Ala Ile Glu Arg Val Ser Glu Ala
 325 330 335
 Ile Val Ser Ile Arg Arg Ile Gln Thr Phe Leu Leu Leu Asp Glu Ile
 340 345 350

Ser Gln Arg Asn Arg Gln Leu Pro Ser Asp Gly Lys Lys Met Val His
 355 360 365
 Val Gln Asp Phe Thr Ala Phe Trp Asp Lys Ala Ser Glu Thr Pro Thr
 370 375 380
 Leu Gln Gly Leu Ser Phe Thr Val Arg Pro Gly Glu Leu Leu Ala Val
 385 390 395 400
 Val Gly Pro Val Gly Ala Gly Lys Ser Ser Leu Leu Ser Ala Val Leu
 405 410 415
 Gly Glu Leu Ala Pro Ser His Gly Leu Val Ser Val His Gly Arg Ile
 420 425 430
 Ala Tyr Val Ser Gln Gln Pro Trp Val Phe Ser Gly Thr Leu Arg Ser
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 Asn Ile Leu Phe Gly Lys Lys Tyr Glu Lys Glu Arg Tyr Glu Lys Val
 450 455 460
 Ile Lys Ala Cys Ala Leu Lys Lys Asp Leu Gln Leu Leu Glu Asp Gly
 465 470 475 480
 Asp Leu Thr Val Ile Gly Asp Arg Gly Thr Thr Leu Ser Gly Gly Gln
 485 490 495
 Lys Ala Arg Val Asn Leu Ala Arg Ala Val Tyr Gln Asp Ala Asp Ile
 500 505 510
 Tyr Leu Leu Asp Asp Pro Leu Ser Ala Val Asp Ala Glu Val Ser Arg
 515 520 525
 His Leu Phe Glu Leu Cys Ile Cys Gln Ile Leu His Glu Lys Ile Thr
 530 535 540
 Ile Leu Val Thr His Gln Leu Gln Tyr Leu Lys Ala Ala Ser Gln Ile
 545 550 555 560
 Leu Ile Leu Lys Asp Gly Lys Met Val Gln Lys Gly Thr Tyr Thr Glu
 565 570 575
 Phe Leu Lys Ser Gly Ile Asp Phe Gly Ser Leu Leu Lys Lys Asp Asn
 580 585 590
 Glu Glu Ser Glu Gln Pro Pro Val Pro Gly Thr Pro Thr Leu Arg Asn
 595 600 605
 Arg Thr Phe Ser Glu Ser Ser Val Trp Ser Gln Gln Ser Ser Arg Pro
 610 615 620
 Ser Leu Lys Asp Gly Ala Leu Glu Ser Gln Asp Thr Glu Asn Val Pro
 625 630 635 640
 Val Thr Leu Ser Glu Glu Asn Arg Ser Glu Gly Lys Val Gly Phe Gln
 645 650 655
 Ala Tyr Lys Asn Tyr Phe Arg Ala Gly Ala His Trp Ile Val Phe Ile

660	665	670
Phe Leu Ile Leu Leu Asn Thr Ala Ala Gln Val Ala Tyr Val Leu Gln 675 680 685		
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Thr Val Asn Gly Gly Gly Asn Val Thr Glu Lys Leu Asp Leu Asn Trp 705 710 715 720		
Tyr Leu Gly Ile Tyr Ser Gly Leu Thr Val Ala Thr Val Leu Phe Gly 725 730 735		
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Asp Ile Gly His Leu Asp Asp Leu Leu Pro Leu Thr Phe Leu Asp Phe 785 790 795 800		
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Val Ile Pro Trp Ile Ala Ile Pro Leu Val Pro Leu Gly Ile Ile Phe 820 825 830		
Ile Phe Leu Arg Arg Tyr Phe Leu Glu Thr Ser Arg Asp Val Lys Arg 835 840 845		
Leu Glu Ser Thr Thr Arg Ser Pro Val Phe Ser His Leu Ser Ser Ser 850 855 860		
Leu Gln Gly Leu Trp Thr Ile Arg Ala Tyr Lys Ala Glu Glu Arg Cys 865 870 875 880		
Gln Glu Leu Phe Asp Ala His Gln Asp Leu His Ser Glu Ala Trp Phe 885 890 895		
Leu Phe Leu Thr Thr Ser Arg Trp Phe Ala Val Arg Leu Asp Ala Ile 900 905 910		
Cys Ala Met Phe Val Ile Ile Val Ala Phe Gly Ser Leu Ile Leu Ala 915 920 925		
Lys Thr Leu Asp Ala Gly Gln Val Gly Leu Ala Leu Ser Tyr Ala Leu 930 935 940		
Thr Leu Met Gly Met Phe Gln Trp Cys Val Arg Gln Ser Ala Glu Val 945 950 955 960		
Glu Asn Met Met Ile Ser Val Glu Arg Val Ile Glu Tyr Thr Asp Leu 965 970 975		

Glu Lys Glu Ala Pro Trp Glu Tyr Gln Lys Arg Pro Pro Pro Ala Trp
 980 985 990
 Pro His Glu Gly Val Ile Ile Phe Asp Asn Val Asn Phe Met Tyr Ser
 995 1000 1005
 Pro Gly Gly Pro Leu Val Leu Lys His Leu Thr Ala Leu Ile Lys Ser
 1010 1015 1020
 Gln Glu Lys Val Gly Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser
 1025 1030 1035 1040
 Leu Ile Ser Ala Leu Phe Arg Leu Ser Glu Pro Glu Gly Lys Ile Trp
 1045 1050 1055
 Ile Asp Lys Ile Leu Thr Thr Glu Ile Gly Leu His Asp Leu Arg Lys
 1060 1065 1070
 Lys Met Ser Ile Ile Pro Gln Glu Pro Val Leu Phe Thr Gly Thr Met
 1075 1080 1085
 Arg Lys Asn Leu Asp Pro Phe Asn Glu His Thr Asp Glu Glu Leu Trp
 1090 1095 1100
 Asn Ala Leu Gln Glu Val Gln Leu Lys Glu Thr Ile Glu Asp Leu Pro
 1105 1110 1115 1120
 Gly Lys Met Asp Thr Glu Leu Ala Glu Ser Gly Ser Asn Phe Ser Val
 1125 1130 1135
 Gly Gln Arg Gln Leu Val Cys Leu Ala Arg Ala Ile Leu Arg Lys Asn
 1140 1145 1150
 Gln Ile Leu Ile Ile Asp Glu Ala Thr Ala Asn Val Asp Pro Arg Thr
 1155 1160 1165
 Asp Glu Leu Ile Gln Lys Lys Ile Arg Glu Lys Phe Ala His Cys Thr
 1170 1175 1180
 Val Leu Thr Ile Ala His Arg Leu Asn Thr Ile Ile Asp Ser Asp Lys
 1185 1190 1195 1200
 Ile Met Val Leu Asp Ser Gly Arg Leu Lys Glu Tyr Asp Glu Pro Tyr
 1205 1210 1215
 Val Leu Leu Gln Asn Lys Glu Ser Leu Phe Tyr Lys Met Val Gln Gln
 1220 1225 1230
 Leu Gly Lys Ala Glu Ala Ala Ala Leu Thr Glu Thr Ala Lys Gln Arg
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<211> 10

<212> PRT

<213> Artificial Sequence

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<223> Made in a lab

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<211> 9

<212> PRT

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<211> 14

<212> PRT

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<210> 542

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Phe Met Gly Ser Ile Val Gln Leu Ser Gln Ser Val
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<210> 544

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Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val Glu Glu Lys Phe

<210> 545

5211> 10

<Z12> PRT

<213> Homo sapiens

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Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val Tyr Leu Ala
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Ser Val

c210> 546

<211> 29

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Thr Glu Ala Arg Arg His Tyr Asp Glu Gly Val Arg Met
20 25

210 547

«211» 58

<212> PRT

<213> Homo sapiens

400 547

Val Ala Glu Glu Ala Ala Leu Gly Pro Thr Glu Pro Ala Glu Gly Leu
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Ser Ala Pro Ser Leu Ser Pro His Cys Cys Pro Cys Arg Ala Arg Leu
30 25 30

Ala Phe Arg Asn Leu Gly Ala Leu Leu Pro Arg Leu His Gln Leu Cys
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Cys Arg Met Pro Arg Thr Leu Arg Arg Leu
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<210> 548

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<212> PRT

<211> Homo sapiens

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10

15

Glu CyB

«210» 549

<211> 18

<212> PRT

<213> Homo sapiens

400 549

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ס 1

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Gln Ala

<210> 550

«211» 14

<212> PRT

«213» Homo sapiens

<400> 550

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<210> 551

4211, 11

<212> PRT

<213> Artificial Sequence

«220»

<223> Made in a lab

<400> 551

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